2-5-1986

Utility Regulation in Flux: The Monopoly Franchise, Private Service, and the Public Interest

Assembly Committee on Utilities and Commerce

Interim Hearing
of
Assembly Committee on
Utilities and Commerce

UTILITY REGULATION IN FLUX:

THE MONOPOLY FRANCHISE, PRIVATE SERVICE, AND THE PUBLIC INTEREST

State Capitol, Room 447
Sacramento, California

February 5, 1986

CHAIRWOMAN: Assemblywoman Gwen Moore

Robert Jackson, Senior Consultant
Yvonne Wilson, Secretary

California Legislature

Assembly Committee on Utilities and Commerce

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Informational Hearing
State Capitol, Room 447
February 5, 1986 - 1:30 PM

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AND THE PUBLIC INTEREST

REVISED AGENDA

I. Opening Statement: Honorable Gwen Moore, Chairwoman
II. Testimony:

Changing Nature of Utility Regulation

Professor Henry Scheiber
Boalt School of Law
University of California,
Berkeley

Ms. Barbara Barkovich
Independent Consultant
Former Director,
PUC Policy Division

Telecommunications

Mr. Glenn Miller
Executive Director,
Marketing
Pacific Bell

Mr. John Dennis
Director,
External Affairs
AT&T

Mr. Peter A. Howley
President and CEO
CENTEX Telecommunications

Mr. Michael Winn
Technical Consultant
Fiber Data Systems, Inc.

Mr. Michael Morris
Director,
Regulatory Affairs
California Cable TV Assn.

Energy

Mr. Dan Gibson
Vice President,
Fuel Resources
PG&E

Mr. Gary Simon
California
Representative
El Paso Natural Gas

Mr. Steve Reynolds
Vice President
Rates
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Ms. Jan Hamrin
Executive Director
Independent Energy
Producers

Mr. Roy M. Rawlings
Manager,
Market Services
Southern California Gas

Prospective Views

Mr. Duncan Wyse
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86-1-137

BACKGROUND

Introduction

Utility regulation came into being at the turn of the century and, for 75 years, remained virtually unchanged. Today, new federal policies, corporate reorganization, and technological innovation appear to call into question the concepts of the "utility" and "regulation." But utility regulation may be a fundamental police power of the state.

What is a utility? Webster's defines it as "the condition or quality of being useful" or, more familiarly, "a public service, such as gas, electricity, water, or transportation." A utility is also "a public service company." The problem comes in defining what is a "public service." For this, Webster's is no help. What is a public service, and what is not, is ultimately a political decision.

Reasonably, a public service is a service to which the public must have access, a service with which individuals and society cannot do without.

But some services once thought to be unquestioningly public are now being provided on a private basis. The causes are complex. Frequently cited as a driving force of competition is technological change. In most cases, however, technology is moot. Policy incentives -- deregulation, tax laws, and federal preemption of local jurisdiction -- create business opportunities for nonutility companies to compete with utilities. Technology is then deployed to exploit these opportunities.

In many cases, the competitive market serves large customers well. With each smaller customer, however, marginal profit declines. The utilities claim that their competitors have no plans to provide universal service, and many competitors agree, suggesting that the services they provide are not of value to the public.

In response, utilities are seeking relief from their obligations to serve all without discrimination. Some spin off subsidiaries, which operate beyond the bounds of regulation. This complicates the regulators' job and creates new risks for their associated utilities. In other states (though not yet in California), utilities are seeking permission to stop serving certain customers; to price services competitively (that is, lower for large customers with access to competitive services); and to deaverage rates among large and small, urban and rural, users. Recently, the Illinois Legislature passed legislation to deregulate that state's telephone industry by 1992.

Competitors complain, however, that deregulation allows the utilities to unfairly compete. The argument is unending.

In the midst of this whirlwind stand the consumers who, whether large or small, are dependent upon vital public services. The consumer is only peripherally involved in the regulation/deregulation/competition debate, most of which takes place in administrative agencies and the courts. Uncertainty is the enemy of business planning, so there are probably substantial economic costs associated with regulatory flux. Individuals also suffer. Ratepayers may be asked to fund the "last resort" service provided by utilities allegedly or actually pressed by competition.

State policy must respond to the needs of all Californians. Regulatory reform is in order. Decision makers should have a clear understanding of the powerful forces which are remaking utility regulation. That is the purpose of today's hearing.

The General Issue: The Utility Obligation to Serve

The California Constitution defines investor-owned providers of certain specified goods and services -- light, heat, water, power, telephone and telegraph service, and various types of transportation service -- as public utilities, subject to extensive control by the Legislature and the Public Utilities Commission.

The public utility concept in California describes a legal relationship between the utility provider and the public (not the same as its customers) characterized by reciprocal privileges and obligations.

The public utility enjoys certain privileges: the power of eminent domain; an exclusive franchise granted by a governmental entity (the power to exclude competing providers); a monopoly ("only seller") relationship to customers; and a monopsony ("only buyer") relationship to certain sellers. The utility's chief privilege is its ability to sell specified goods and services which are necessities, in that their reliable, nondiscriminatory availability underlies the existence of all other forms of economic enterprise. Hence the Constitution's approach of a list of services.

These privileges entail obligations. Prices are established by the Public Utilities Commission after a hearing, rather than unilaterally by the utility; corporate securities are issued subject to its approval; the PUC can establish accounting procedures; utility sales practices are subject to PUC approval; and utilities must provide information to the public, as directed by the PUC.

The utility obligation on which this hearing focuses is the obligation to serve. As the California Public Utilities Code puts it:

> Every public utility shall furnish and maintain such adequate, efficient, just and reasonable service, instrumentalities, equipment, and facilities as are necessary to promote the safety, health, comfort and convenience of its patrons, employees and the public (Sect. 451).

The traditional understanding of this obligation is that the utility should be prepared to provide, on demand, adequate service to anyone who can pay ("patrons"), for society's benefit ("public"). This implies vertical integration to ensure control over production and distribution, and long-range planning to avoid shortages.

The reciprocal obligation of the utility's customer is to pay a price for service that includes the cost, whatever that may be, of the utility's "preparedness to serve." Historically, that price has tended to be an average price, recognizing that the service is provided through an integrated system serving numerous customers.

Over the past ten years, the traditional understanding of these obligations has undergone profound change.

Energy Service

In the energy field, the oil embargo and the experience of periodic shortages of natural gas led to a policy requirement that certain customers ("low-priority" customers) be prepared to do without utility service by acquiring "dual-fuel" or self-generation capability. State and federal laws have established "curtailment priorities," literally a list of customers who will lose service first in case of shortage.

Utilities attempted to live up to their obligation by acquiring supply any way they could, in many cases almost without regard to cost. As prices rose, assumptions about demand elasticity and conservation potential had to be substantially revised.

Public policy focused on managing demand, achieving a balance between supply and demand, developing diversified alternative energy sources, and improving techniques of market analysis and corporate planning.

This entailed bringing new capital into the energy industries, in the form of higher allowed profits for the

existing utilities and programs intended to attract new entrants. The Public Utilities Regulatory Policy Act (PURPA) created a market for nonutility producers of electricity by requiring utilities to purchase their energy product.

PURPA-created "qualifying facilities" (QF's) compete with utility-owned electricty sources for access to the utility grid, as suppliers to the utility or as direct sellers to a retail customer. End-users build their own primary electric generators (self-generation), or attempt to buy direct from third party sources (wheeling.)

Large-volume gas customers, threatened with curtailment and facing rising prices, are attempting to purchase their own gas supply, independent of the utility's supply. Pipeline transporters of gas, which have for years supplied markets through long-term, large volume "service contracts" with utilities, are encouraged by the Federal Energy Regulatory Commission (FERC) to modify the terms of their service contracts and at the same time become "open access pipelines" -- in effect, common carriers of gas owned by others.

Other phenomena of the new emphasis on diversified energy resources include utility financed conservation programs, enhanced gas drilling, and a proliferation of gas pipelines.

The experience of shortage, and the related responses of demand-management and recapitalization (involving the capital investments of utilities, new entrants, and customers), led some to propose a new concept of the energy utility, as a "participant" in a "marketplace," in which multiple sellers attempt to transact business with multiple buyers.

Telecommunications

The early history of telecommunications in America was highly competitive. Several telegraph companies battled to serve markets from the 1890's until the 1940's, when Western Union absorbed its last challenger, Postal Telegraph. Literally thousands of telephone companies, serving small geographical or business markets, competed for infinitesimal shares of the national market until AT&T gradually swallowed them up.

If the early telecommunications market was competitive, however, it was also defective. Most Americans did not have access to a telephone, prices were completely random, redundant plant was driving many companies into bankruptcy, and interconnection between systems was nearly impossible.

Telecommunications became a regulated utility, locally and nationally, in the 1910's and 1920's. Theodore Vail, an early chairman of AT&T, is often credited with acquiring utility status

for his firm, the better with which to pursue his goal of a national telephone monopoly. The monopoly franchise, granted on a state by state basis, became the basis for AT&T's transcontinental expansion. But this did not noticeably improve the potential customer's plight: telephone service was priced at cost, which meant that additional customers had to pay the full price of their initial connection. As late as the early 1930's, as few as 30 percent of all Americans had access to a telephone.

In 1934, the Communications Act delegated national regulatory functions to the Federal Communications Commission (FCC) and reiterated the responsibilities of state regulatory commissions with regard to intrastate service. Together, they worked out a series of schemes to adjusted rates throughout the monopoly, cheapening the price of local service at the expense of long-distance customers. Additionally, the Congress appropriated money to subsidize small private and cooperative telephone companies in rural areas.

For 25 years, this system worked well, so that eventually 90 percent of all Americans became telephone customers. But the 1950's saw the beginning of an assault on the telephone monopoly by large customers, including the government, concerned with cutting their telecommunications expenses. In 1957, airlines, newspapers, manufacturers, retailers, and petroleum firms, through their associations and law firms, persuaded the FCC to issue the "Above 890" decision, opening microwave transmission to competitive supply. A series of deregulatory events followed in the succeeding three decades, culminating in the 1984 divestiture by AT&T of its local telephone companies.

As a result, telephone equipment, local service, and long-distance service are "unbundled" -- customers can buy each separately. In California, as in most states, sales of telephone equipment are unregulated; local service is regulated; and long-distance service exists in a limbo between regulation and nonregulation. The monopoly franchise has shrunk to the size of the LATA's, or local service areas, resulting from divestiture. (There are 11 local service areas in California.) Within them, local telephone companies continue to provide telephone service on a regulated basis.

For these local connections, local telephone companies are paid access charges (nearly $2 billion in California) by long-distance carriers and their customers. But new competitors, ranging from special radio transmission services to fiberoptic networks to cable television, wish to enter this market, particularly the lucrative data communications business. Additionally, the long-distance carriers are now capable, as a result of recent FCC hearings, of linking directly to larger customers. Together, the local competitors, the long-distance companies, and their customers can "bypass" the telephone

companies and avoid paying access charges. The local telephone companies claim that if sufficient bypass occurs, they cannot defray the cost of basic telephone service with access charges. They seek to exclude competition. Simultaneously, to bolster their revenues, they want to provide new services for which there are few formidable competitors.

Many competitors argue that they provide unique services to a small and select market which the telephone companies cannot and will not economically serve. On the other hand, large customers agree with the phone companies that, if the phone companies would offer better prices for the services they provide, the threat of bypass would be significantly reduced. In either case, the phone companies, their competitors, and their largest customers agree, smaller ratepayers must make up more of the cost of maintaining utility service.

PUC President Don Vial has called this "regulatory blackmail." Nevertheless, the PUC, in 1985, began shifting between $900 million and $2.5 billion in local telephone company charges from the long-distance carriers and their customers to local telephone customers, through a steadily rising surcharge. The FCC is doing the same thing with a flat customer charge, due to rise to $2 per month in June 1986 for residents and holding steady at $6 per line per month for business customers.

All of this tumult begs the question: just what is a telecommunications utility? What services are absolutely indispensable to the public; which are socially desirable on a universal basis; and which are decidedly private, to be provided through the competitive market? How appropriate is it for the regulated utility to supply all or some of these telecommunications services? Should all of these services, or some portion of them, be available to every customer -- and should every customer pay for their availability?

What of those who cannot use some services now, but who might benefit by their universal availability in the future? (Certain computer-communications services now available on a limited basis, like electronic mail, might have broad public applicability.) And what of those large customers, who voluntarily give up public service in favor of private service: should they be required to compensate other ratepayers for maintaining reserve capacity, in the event they should want to return to the public network?

These questions take on new importance as an aggressively deregulatory FCC attempts preempt state regulatory authority, and as telecommunications technology transforms telephone service. In the early 1990's, integrated service digital network, or ISDN, will be commercially available. ISDN will provide voice, video, and data service on the same "wire" into the home or office. Its

proponents claim it will serve the needs of all customers more economically, regardless of their characteristics. If this is true, then no alternative transmission service will be able to compete with ISDN, and the natural monopoly will have returned in force to telecommunications.

But ISDN technology has high up-front capital costs, for equipment and organization; who should pay these costs? ISDN services can be separately provided by local telephone companies, long-distance carriers, and even local private networks (though all must be interconnected at some point). How should the right to provide the service be parceled out, and at whose expense? All ratepayers? Only those who use the services? Or those who will most rapidly use ISDN? These questions are not hypothetical: Pacific Bell's experiment with its pre-ISDN "Project Victoria," in Danville, begins in March of this year.

The FCC's Computer III inquiry, to be completed by June, may allow telephone companies to reenter markets from which they were precluded by earlier FCC and court decisions. Meanwhile, entrepreneurs of all varieties are refining their service offerings to take advantage of every technological and legal opportunity for market share.

Increasingly, as telephone utilities and their competitors edge toward the provision of comprehensive information services, directly or through subsidiaries, further questions will be raised about the distribution of information in society. Today, customers pay telephone companies by the telephone call, but they are making these calls for the exchange of information. In the future, the telephone companies and other firms may make available access to sophisticated databases, for education, entertainment, governance, and commerce. Today, "976" services fulfill this function in a rudimentary fashion. If policymakers of the future determine electronically delivered information to be a public service -- "a service to which the public must have access, a service with which individuals and society cannot do without" -- they may have to create a new category of regulated entities, "information utilities."

Among the issues of interest to the Committee are the following:

- What is the obligation of a utility to provide service? What is the meaning of the statutory term, "adequate, efficient, just and reasonable service, instrumentalities, equipment, and facilities as are necessary to promote the safety, health, comfort convenience of its patrons, employees and the public"?

- Does the obligation to serve extend to all forms of utility service, or only to some conventionally defined level or type of service?

- Should the obligation be different as between existing and new customers?

- What is the relationship between the monopoly franchise and the obligation to serve? Does a customer's decision to take service from a utility's competitor result in a forfeiture of the right to demand utility service?

- What is the obligation of a utility to be prepared to render service?

- What equities are involved in current customers paying for readiness to serve future customers, or paying to maintain facilities formerly dedicated to bypassing customers?

- What are the implications of technological improvements to utility service which serve, in the long- or short-term, only certain portions of the utility's customer population?

- How can it be determined what is properly a utility service and what is not? Can a new service, not now provided by a utility company, be determined to be a utility service? What might be the criteria on which to make this determination?

- In the telecommunications field, what is the regulated service being provided? What might be the definition of telecommunications or information services that are not regulated?

- What are the respective costs and benefits of preserving aggregation and averaging of demand for utility purchases of gas?

- Do the prospects of wholesale wheeling of electricity promise benefits to consumers as a whole, or only to segments of the customer population?

The Changing Structure of the Public Utility Sector

By CHARLES F. PHILLIPS, JR.

America's public utilities have emerged from a decade of painful adaptation to a new economic, political, and regulatory environment. The process of change, however, will not abate as increasing competitive pressures force utilities to adopt more flexible operational philosophies and consider much needed structural reform.

The public utility sector of the American economy has confronted two major changes in its environment in just over a decade. The first change began in the late 1960s. It occurred because of the development of a hostile economic, social, and political environment, and resulted in a decade-long struggle for survival. The second change began in the mid- to late 1970s and resulted in the restructuring of significant portions of the public utility sector. The issues and problems are both numerous and complex.

The Pre-1968 Period: A Brief Review

The tremendous post-World War II expansion of the public utility sector was accomplished in a favorable and supportive environment. Economic growth was unquestioned. Annual inflation rates, as well as interest rates, were low. Utilities could plan, construct, and finance new plant in a relatively short period of time, and without great difficulty. Six- to eight-year planning periods for new generating facilities, for instance, were common. Capacity and reserves were adequate. Rates, due to the achievement of economies of scale and sales growth, were relatively constant or declining. And there were many who indicated that these trends would continue. Thus, the 1964 "National Power Survey" projected that there would be "a reduction in the nationwide average price per kilowatt-hour from 1.7 cents today to about 1.2 cents in 1980."[1]

The regulatory process was geared to this environment. "[T]he task of state regulators," Howard Perry reminds us, "was essentially one of distributing among ratepayers the benefits of the progressively higher efficiencies achieved by utility managers. Not bad work, if you can get it."[2] Consider: Many state commissioners were part-time, and were seeking higher offices. Rate cases — and generally rate decrease cases — occurred every five years or so and, for rate-making purposes, the resulting rate case expenses commonly were amortized over a five-year period. The emphasis in rate design was on promotion (via declining block rates and internal subsidies) and on fairness (witness the development of detailed cost allocation methods — separations procedures in the telephone industry, methods to allocate demand costs in the electric power industry, and the development of the Seaboard formula in the

Charles F. Phillips, Jr., is the Robert G. Brown Professor of Economics at Washington and Lee University. He is also president of the Institute for Study of Regulation. Over the past two decades, he has testified on rate of return or rate structure in over 100 public utility cases before federal and state regulatory commissions. Since 1971, he has served as mayor of the city of Lexington, Virginia. **Dr. Phillips** received an AB degree from the University of New Hampshire and a PhD degree from Harvard University. He is the author of *"The Regulation of Public Utilities"* (1984)

[1] "National Power Survey," Federal Power Commission, Washington, D. C., U. S. Government Printing Office, 1964, Vol. 1, p. 277.

[2] "The New Federalism, Free Market Economics, and Utility Regulation," by Howard Perry, mimeographed, 1981, p. 5.

natural gas industry). For both the regulated and the regulator, life was a quiet one!

The First Change: The 1970s

Beginning in the late 1960s, a series of events, which altered the environment within which public utilities operated, impacted on the economy. To summarize:

1) The annual rate of inflation began to accelerate in 1968, affecting both operating and construction costs.

2) Interest rates started to rise, forcing the capital-intensive utilities to pay record-high costs for their new capital. The combination of rising costs and higher interest rates caused almost immediate coverage problems, widespread bond downgradings, and even higher interest costs.

3) Fuel prices, for electric and gas utilities, started to escalate; by the end of the 1970s, many had tripled.

4) Inevitably, utility rates began to rise. Consumers started to organize and to intervene in rate cases in opposition to such increases — increases which began to occur almost annually and which involved larger and larger requests[3] — and to urge new rate design concepts (particularly lifeline rates for those having difficulty paying rising monthly utility bills). The consumer group quickly expanded from basically residential customers, to commercial and industrial customers, as well as the federal government.

5) The adequacy of capacity and reserves became matters of concern, as construction cutbacks occurred in electric generating plants and proved natural gas reserves declined, leading to service curtailments (and to an acute shortage during the winter of 1976-77).

6) Americans became seriously concerned about the environment, as reflected in policy measures which forced business enterprises to cover both private and social costs and to invest millions of dollars in nonrevenue producing pollution control equipment.

7) Intervention by environmental groups became common, particularly in electric rate cases. Such groups made two basic arguments. First, they contended that by failing to "internalize" social costs in rates — e.g., "foul air, scarred landscape, and polluted streams" — utilities "encouraged their users to consume more electricity than was optimal."[4] Second, "because the price of electricity did not vary by time of use, they claimed that utilities built more power plants than were needed in order to meet their peak demands."[5]

8) The media, after years of neglect, began to cover utility hearings, often giving them top coverage,[6] and to discuss the major issues confronting the entire public utility sector.

9) The legislative branches, state and federal, became involved as hundreds of bills were introduced dealing with various aspects of regulation; e.g., elected versus appointed commissioners, automatic fuel adjustment clauses, construction work in progress in the rate base. Regulatory issues began to appear on state ballots, with nuclear-related measures predominate; e.g., Maine voters, in 1980 and 1982, rejected measures to close the state's only nuclear power facility. Utility-related issues became of significance in several statewide political campaigns; e.g., the 1978 gubernatorial race in New Hampshire.

10) The judicial branch also became more involved in the regulatory process. First, rate cases were often appealed either by the affected utility or by an intervenor. Second, federal-state jurisdictional problems intensified throughout the 1970s, and these disputes had to be resolved. Third, new legislation had to be interpreted, especially the national energy legislation of 1978, but also environmental legislation. In short, the courts became active participants.[7]

11) Finally, conservation began to be promoted as the major long-run solution to the "energy crisis." Conservation, in turn, conflicted with the long-standing philosophy of rate design: promotion and fairness.

As a consequence of these — and other developments — the decade of the 1970s was one of strain, change, and experimentation for the entire public utility sector. Many utilities and regulatory commissions were ill-equipped to deal with the new environment. From the point of view of the utilities, their marketing departments had effectively promoted the use of energy and communications for decades. Conservation; inverted, flat, or lifeline rates; and inflation all conflicted with

[3] In 1970, 46 investor-owned electric utilities received $430,578,000 in rate relief, an average of $9,360,391 per company. In 1981, 101 investor-owned electric utilities received $9,477,250,000 in rate relief, an average of $93,834,158 per company. (Data from Ebasco Business Consulting Company.) In the 25-year period 1948 through 1973, electric and gas rates increased $6 billion, compared with an increase of $48.3 billion in the four-year period 1974 through 1977. *Electric and Gas Utility Rate and Fuel Adjustment Clause Increases, 1977*, Committee Print, Subcommittee on Intergovernmental Relations and Subcommittee on Energy, Nuclear Proliferation and Federal Services, Senate, 95th Congress, second session, Washington, D. C., U. S. Government Printing Office, 1978, p. vii.

[4] "State Regulation of Electric Utilities," by Douglas D. Anderson, in James Q. Wilson (ed.), *"The Politics of Regulation,"* Basic Books, Inc., New York, 1980, p. 24.

[5] Ibid.

[6] "In close pursuit of the consumers came television and newspaper reporters, ever eager to broadcast a confrontation. Regulators, who a few years before had enjoyed the relative obscurity of technical debates over such arcane matters as the proper valuation of a utility's rate base and the correct treatment of depreciation, now saw those same debates recast in emotional terms before a wide audience." Ibid, pp. 23, 24.

[7] Sometimes too active, according to many. As Justice Rehnquist wrote in a 1978 decision: "Administrative decisions should be set aside in this context, as in every other, only for substantial procedural or substantive reasons as mandated by statute . . . not simply because the court is unhappy with the result reached. . . ." Vermont Yankee Nuclear Power Corp. v Natural Resources Defense Council (1978), 435 US 519, 558.

this mission. It was almost impossible to obtain accurate load and financial projections from electric utilities. Moreover: (1) The electric power industry was not even in charge of its technological destiny; for decades, it had relied upon its equipment manufacturers for technological advances and, equally important, technological advances had slowed considerably. (2) The Federal Power Commission's wellhead price regulation held natural gas prices well below the competitive level, thereby encouraging consumption but discouraging exploration and development, and contributing to the natural gas shortage.[8]

From the point of view of the regulatory commissions, annual appropriations were too small (particularly at the state level) to permit adequate staffs, both in terms of number and of composition. The regulatory process was oriented toward the past — e.g., past or historic test years, embedded or fully distributed cost pricing methodology — and for periodic rate reductions; some state commissioners, as already noted, were only part-time. Regulatory lag became a serious problem just at a time when public utilities found it essential to request, and the commissions to grant, larger and larger annual rate increases. Old issues were revived — e.g., deposit and termination policies — new issues were raised; e.g., curtailment priorities, conservation programs. The emphasis in rate cases shifted — from revenue requirements to rate design and, in turn, from embedded costs to marginal or incremental costs. As the planning period nearly doubled for electric utilities, construction work in progress became a crucial issue; as cutbacks occurred, so did the treatment of plant abandonment. The entire regulatory process became "highly adversarial, as well as analytically demanding."[9]

Some Implications: The impact of this new environment can only be described as enormous — on both the regulated and the regulator. Rate increase cases proliferated, and soon resulted in a growing burden on utility and commission staffs. Marketing departments (in many electric firms) were abolished; planning departments were created. Indeed, many utilities made substantial reorganizations — on occasion, resulting from management audits (the rage of the 1970s). Utilities and their investors found that earnings could fluctuate both upward and downward, and that annual dividend increases were no longer "guaranteed." (Dividends, in fact, were no longer a certainty, as Consolidated Edison Company of New York, Inc.'s stockholders learned in April, 1974.) The public's perception of utilities changed radically, and utilities tried several different approaches to regain consumer confidence throughout the decade. Customers found that even though rates were increasing, service interruptions could and did occur. Natural gas companies began to invest time and money in alternative gas sources; electric and gas utilities began to study diversification moves into nonregulated activities (a possibility that raised new issues[10]). Telephone utilities began to reorganize to confront the new competitive challenges.

But above all else, and despite substantial rate relief, the utility sector's financial integrity declined. By 1974, for example, market prices had fallen significantly below book values, making it impossible to sell new common stock without dilution. In many cases, debt ratios started to rise in order to avoid dilution. At the same time, the utilities' return on common equity was falling, while industrial earnings on common equity were rising and, for electric utilities, an increasing percentage of their annual earnings per share was comprised of allowance for funds used during construction; many electrics did not have cash earnings equal to their dividend payments. On the debt side, the combination of high interest rates and downgradings resulted in significant increases in the embedded cost of debt. Contends MacAvoy: "By the end of the decade, these regulated industries rather than leading in investment and production lagged behind the rest of the economy."[11] In fact, the entire decade of the 1970s can be characterized as an attempt by the utility sector to adjust to the new environment and to regain its financial integrity.

The same pressures confronted regulators. To quote Howard Perry once again: "What we are now witnessing in state regulation — and the rapid turnover among commissioners is the most visible symptom of this — is painful adaptation to an environment that was once comfortable, and has now become hostile."[12] As further evidence, consider the fact that in fiscal 1967, the state commissions employed 5,989 full-time staff members and spent $65 million, whereas in fiscal 1981, they employed 9,268 full-time staff members (an increase of 55 per cent) and spent $268 million (an increase of 312 per cent).[13]

Turning for a moment to the regulatory process itself, many attempts were made to shorten the process; e.g., canned testimony, prehearing conferences, wider

[8]See *Energy Regulation by the Federal Power Commission*, by Stephen G. Breyer and Paul W. MacAvoy, The Brookings Institution, Washington, D. C., 1974, especially Chap 3.

[9]Perry, op cit.

[10]See "A High-risk Era for the Utilities," *Business Week*, February 23, 1981, pp. 76-86. Warned one editorial: "Inevitably the attempts of the power companies to get their capital out of the utility industry brings to mind the sad history of the Penn Central and the collapse of what once called itself 'the standard railroad of the world.'" Ibid, p. 162.

[11]*"The Regulated Industries and the Economy,"* by Paul W. MacAvoy, W. W. Norton and Company, New York, 1979, p. 29. See also *"The Decline of Service in the Regulated Industries,"* by Andrew S. Carron and Paul W. MacAvoy, American Enterprise Institute, Washington, D. C., 1981.

[12]Perry, op cit.

[13]See *"The Regulation of Public Utilities,"* by Charles F. Phillips, Jr., Public Utilities Reports, Inc., Arlington, Virginia, 1984, pp. 124, 125.

use — at the state level — of administrative law judges. There were countless *generic* proposals (to use Judge Breyer's classification[14]) made to make public utility regulation more effective and fairer, including (1) changing the regulatory commissions' structure and procedures, such as by a separation of functions and by the greater use of informal procedures, (2) devising methods to attract better personnel, including longer tenures and higher salaries, and (3) improving the agencies' accountability, particularly by better policy review — impact statements, sunset legislation, and the regulatory budget have been proposed.[15] And there were several suggestions toward the establishment of performance objectives, letting the utilities decide how to meet those objectives, with profit incentives.[16]

The Second Change: The Mid-to-Late 1970s And Early 1980s

Given the strain on the regulatory process, it is little wonder that significant *substantive* reform (to continue with Judge Breyer's classification[17]) occurred, if for no other reason *(and there were many other good reasons)* than the inability of understaffed and overworked regulatory agencies to handle the growing work loads and the conflicting pressures. That substantive reform, of course, was deregulation. To date, Congress has substantially deregulated the transportation utilities and has removed federal controls from approximately one-half of all natural gas sold; a bill to deregulate most of the oil pipeline industry has been introduced into Congress. The 1982 modification of final judgment required the divestiture of the Bell system and greatly enhanced the Federal Communication Commission's procompetitive policy of the past decade or so. The Federal Energy Regulatory Commission's 1985 rule on natural gas transportation and rates promises to result in greater reliance on competitive forces in the natural gas industry. And debate continues over the desirability of deregulating a portion of the electric power industry — i.e., generation — a debate that the growth of cogeneration may make moot. In each instance where deregulation or divestiture was undertaken (or both), there were compelling economic arguments for the action.

The Competitive Environment: Regulation, as a substitute for competition, has never enjoyed great popularity. "Among economists," concludes Dewey as one example, "the disdain and contempt for regulation is nearly universal: if effective, it is thought to be pernicious, and if ineffective, a waste of resources."[18] The case against regulation was stated several years ago by Wilcox:

> Taking the place of competition as the method of control, regulation should be expected to yield comparable results. It should not only prevent the regulated industry from charging a monopoly price, impairing the quality of its service, and enjoying a monopoly profit. It should provide an incentive to adopt new methods, to improve quality, to increase efficiency and cut costs, to develop mass markets and expand output by selling at a lower price. It does none of these things.[19]

Competitive forces and pressures, however, both simplify and complicate the regulatory process. They simplify the regulatory process in that public utility rates should increasingly be set by market forces, and not by regulatory action, whether those rates be the wellhead price of natural gas or prices at the burner tip, or interLATA (local access and transport area) telephone rates. Yet, at the same time, they complicate the regulatory process by presenting a series of new issues and challenges that will require imaginative solutions. Let us look at a few illustrations.

A Competitive Philosophy

First, competition will force public utilities to reorganize and to adopt a competitive philosophy. The present structure of utilities (both organizational and financial) was predicated on the natural monopoly concept; i.e., ". . . customers have no place else to go for service, prices are set by regulators, recovery of investment is assured, the utility retains economies of scale and is the low-cost producer, and competition is on the fringes (if anywhere)."[20] Summarizes Leonard Hyman:

> That view has led to the following policies:
> * Cross-subsidies so that certain customers do not carry their costs.
> * Low rates of depreciation.
> * High debt ratios on the theory that low business risk can be offset with high financial risk.
> * Capitalization of costs on the theory that recovery of those costs can be assured through the regulatory process.

[14]*"Regulation and Its Reform,"* by Stephen G. Breyer, Harvard University Press, Cambridge, 1982, p. 341.

[15]See Phillips, op cit, especially Chap 17.

[16]See e.g., "Rate Incentive Provisions: A Framework for Analysis and a Survey of Activities," National Regulatory Research Institute, Columbus, Ohio, 1981; *Incentive Regulation in the Electric Utility Industry*, Federal Energy Regulatory Commission, Vols. 1 and 2, Washington, D. C., 1983.

[17]Breyer, op cit, p. 363.

[18]"The New Learning: One Man's View," by D. L. Dewey, in H. J. Goldschmid, H. M. Mann, and J. F. Weston (eds.), *"Industrial Concentration: The New Learning,"* Little, Brown and Company, Boston, 1974, p. 10.

[19]*"Public Policies Toward Business,"* by Clair Wilcox, third edition, Richard D. Irwin, Inc., Homewood, Illinois, 1966, p. 476.

[20]"Utility Finance: Looking Toward the Future or Parallel Lines Do Converge at the Horizon," by Leonard S. Hyman, a presentation to Public Utility Reports Financial Conference, New York city, February 25, 1985, p. 2.

* Taking what have proved to be unexpectedly high risks for low returns because risk was ignored on the theory that regulators can and will bail out the utility.
* Use of mortgage debt because the assets were supposed to be valuable and solid.
* High dividend payout ratio because earnings were stable.
* Vertical integration to reach economies of scale to provide high-quality service.[21]

The fact of the matter is that these policies are no longer appropriate in the new competitive and economic environment. The examples are endless. Because of the competitive environment, the American Telephone and Telegraph Company, during its reorganization, wrote off some $5.2 billion of assets, in large part ($3.8 billion) reflecting a reduction in the book value of telephone equipment and network facilities, and shifted its accounting methods from the "uniform system of accounts" to "generally accepted accounting procedures." Deregulation, as telephone subscribers are learning, "means removing cross-subsidies, basing prices on costs, de-averaging prices, detariffing competitive services, introducing more realistic depreciation schedules, and permitting free and open entry into new lines of business."[22] It will require the separation of resource allocation objectives from social equity or income distribution considerations. Marketing will become a cornerstone of a competitive philosophy, as AT&T well recognizes; marketing programs that must conform to generally accepted competitive behavior. Pricing will become more complex, as airline deregulation proved.[23]

Management, according to Bleeke, must "maintain a clear sense of corporate direction and avoid foreclosing options by reacting too hastily to an unfamiliar competitive environment."[24] Consider Braniff Airlines. "Prior to deregulation it differentiated itself from other competitors by serving very specialized markets and emphasized luxury. With deregulation it expanded its route system by 50 per cent overnight. It immediately became an international carrier, got involved in price wars, found its profits disappearing, and went into bankruptcy."[25] In short: "Questions that once were thought routine now must be considered within a broader context of competition and market forces."[26]

It is easy to predict, therefore, that the emphasis upon pricing and rate design, which occurred throughout the 1970s, will continue into the future, for it is essential in the new environment that consumers be given proper price signals. Take local telephone service. Competition will result in the elimination of the subsidies long enjoyed by local companies, thereby causing local rates to continue to increase. Proper price signals and, absent government subsidies, the old goal of universal service, can be achieved only by the introduction of measured local service. In the words of Irwin Stelzer:

> . . . Measured local service can cushion the effect of losing the subsidy, since the fixed monthly charge for access to local measured service can be set lower than the comparable rate for flat rate service, which would have to be high enough to cover the cost of free local calls as well as access. With measured service, the customer has control over the size of his local service bill. He can keep his bill below what it would be under flat rate service by making fewer local calls. And a customer who highly values local calls will presumably continue to make many, but will now be guided by price to make only those calls whose value to him exceeds their cost. This, of course, is exactly as it should be.[27]

The introduction of measured local service, however, has not been easy, since it is abundantly clear that such service is unpopular.

Or, take gas pipeline rate design. The use of rolled-in pricing, states FERC Chairman O'Connor,

> . . . separates the commodity rate the consumer sees from the price the producer sees. If a pipeline has supplies of low-priced gas under contract, it may be more willing to pay a higher price to producers. Consumers never see the higher price paid to the producer. Instead, they see a much smaller price change as the high-priced gas is averaged in with low-priced gas. We need to examine the use of rolled-in pricing and explore better ways of communicating price and volume signals from producers to consumers.[28]

Or, consider a third example. Throughout the 1970s, the FCC used a fully distributed cost approach, even as it permitted entry into selected telecommunications mar-

[21] Ibid, pp. 2, 3.

[22] William L. Weiss, as quoted in 115 PUBLIC UTILITIES FORTNIGHTLY 12, March 7, 1985.

[23] In the postderegulation period, discount plans offered by airlines made it virtually impossible for the average traveler to determine the cheapest route. Indeed, simply the magnitude of discounted fares is significant. According to George James: "In April, 1982, 77 per cent of domestic coach traffic of the majors moved on discount fares. This compares with about 67 per cent in April, 1981, and 46 per cent in April, 1978." "The Deregulation Experience of the U. S. Airline Industry," by George W. James, speech before the 1982 Symposium on Regulation, Warrenton, Virginia, August, 1982, p. 6.

[24] "Deregulation: Riding the Rapids," by Joel Bleeke, 26 *Business Horizons* 15, 25, May-June, 1983.

[25] "*Business, Government, and Society*," by George A. Steiner and John F. Steiner, fourth edition, Random House, Inc., New York, 1985, p. 189.

[26] "Balancing Competition and Regulation in the Natural Gas Industry," by Raymond J. O'Connor, 115 PUBLIC UTILITIES FORTNIGHTLY 15, 17, January 24, 1985.

[27] "The Post-Decree Telecommunications Industry," by Irwin M. Stelzer, National Economic Research Associates, Inc., New York, 1982, p. 7.

[28] O'Connor, op cit, p. 16. However, the commission's attempt to implement a rule requiring "block billing" proved controversial. See "Final Rule Satisfies on Transportation; Block Billing Reaction Mixed," *Inside F.E.R.C.*, October 14, 1985, pp. 1, 4-4a.

kets. Indeed, during the entire decade, the commission was unable to find a cost-justified bulk service tariff; i.e., TELPAK, WATS, "High/Low," MPL. Whatever the merits of a fully distributed cost approach, and whatever the justification for such an approach in the past regulatory process, it is at odds with a competitive philosophy. Said the seventh circuit court in one of the private antitrust suits against the Bell system:

> In particular, FDC [fully distributed cost] fails as a relevant measure of cost in a competitive market. FDC is, at best, a rough indicator of an appropriate rate *ceiling* for regulatory purposes and should not be used as a measure of the minimum price permissible in a competitive market.[29]

These three examples simply scratch the surface; other critical issues include the possible deregulation of all gas prices (particularly 104 gas) and the repeal of "incremental pricing" in the case of natural gas, and electricity transfers (which includes the FERC's experimental economy energy transfers in the southwest and the need to re-evaluate both "wheeling rates" and "avoided cost" definitions). Further, Congress is perhaps the only body that can resolve the inherent conflict in goals in the provision of telephone service; i.e., universal service versus competitive rates.

Knowing When Not *to Regulate*

Second, one of the greatest challenges confronting regulation today is to know when *not* to regulate. As competitive forces strengthen, prices should be determined in the marketplace. But at just what point competitive forces are strong enough to permit the end of pervasive regulation is yet to be determined. The issue already is one confronting both federal and state commissions in the provision of telecommunications services. How long should the FCC maintain comprehensive control over AT&T Communications, Inc.'s, interLATA, interexchange rates? How long should the state commissions maintain comprehensive control over intrastate, interLATA, interexchange rates?

In August of 1984, for example, the Virginia State Corporation Commission issued a landmark decision in this area, when it decided to permit unregulated competition in the provision of intrastate, interLATA, interexchange services.[30] The order also applied to the dominant carrier, although AT&T was ordered not to deaverage rates for particular services on a geographic basis "until such time as we are satisfied that competitive factors will control its rates."[31] To illustrate both its content and its tone, the following two paragraphs from the order are instructive:

> In our view, effective competition does not mean that all firms serve all markets or that more than one firm necessarily serves each market. We believe the threat of competition is, in itself, a potent check on a firm's pricing policies. Nor do we believe effective competition requires that all companies provide exactly the same product under identical circumstances. Indeed, if this were the case, one would be hard pressed to find an example of effective competition anywhere in the economy. In any event, the consuming public benefits from the wider range of price-quality choices arising from these differences. New entrants to virtually any market face challenges, but that is the nature of competition. Profits or success are not guaranteed. However, as evidenced by numerous examples in other industries such as computers, through use of ingenuity new entrants can succeed against seemingly formidable odds. The competitors in this case include well-financed, sophisticated companies with considerable experience in the telecommunications market. Therefore, in our judgement, the potential for effective competition is very high.
>
> If the present regulation of AT&T's rates were continued until all of these challenges no longer existed, a change to competitive rates would not occur in the foreseeable future. And that does not serve the public interest. To continue traditional regulation of AT&T while not regulating the other common carriers would maintain rates at artificially high levels. It may even contribute to higher rates for rural customers if AT&T, unable to freely compete, lost its high-volume, high-density market.[32]

The commission announced that its division of communications would "monitor" closely the interLATA, interexchange telecommunications market, including tariffs, consumer complaints, rate levels, financial condition, and rivalrous activity, and stated: "If we find competition inadequate to serve the public interest, we will not hesitate to reimpose traditional regulatory review."[33] Finally, the Virginia commission noted: "Our determination that the interexchange market is competitive is notice to all carriers that their conduct henceforth is in no manner exempted by this commission from the reach of antitrust laws. From the date of this order they must conduct their business accordingly."[34]

In making such decisions, detailed economic analysis

[29]MCI Communications Corp. et al. v American Teleph. & Teleg. Co., 1982-83 Trade Cases, ¶ 65,137, p. 71,378 (CA7th 1983). See also Northeastern Teleph. Co. v American Teleph. & Teleg. Co. et al., 1981-1 Trade Cases, ¶ 64,027, pp. 76,315-76,316 (CA2nd 1981); and South Pacific Communications Co. et al. v American Teleph. & Teleg. Co. et al., 1982-83 Trade Cases, ¶ 65,219, pp. 71,975-71,976 (DC DC 1982).

[30]Re SouthernTel of Virginia, Inc. (Va 1984) 62 PUR4th 245.

[31]Ibid, p. 257.

[32]Ibid, p. 256.

[33]Ibid, p. 257.

[34]Ibid, pp. 257, 258.

will be required and regulatory agencies (and utilities) will confront an antitrust constraint. Above all, they will find that a proper monitoring function differs substantially from the traditional regulatory function and that it requires, among other things, great restraint.[35]

Competition and the Need for Flexibility

Third, the growing competitive environment will require much greater flexibility (the new buzzword of the 1980s?) in the coming years. Almost every critic of economic regulation has noted the rigidity of traditional regulation as compared with competition; a rigidity, in part, dictated by the necessity of satisfying the requirements of due process. Can any reader imagine competitive enterprises such as International Business Machines Corporation, General Motors Corporation, Safeway Stores, Inc., or Kroger Company having to wait just over nine months to change their prices? Competition has no respect for precedent and the traditional regulatory process.

FERC Chairman O'Connor, in a recent article, put it this way:

> Another problem with traditional rate making has been its inflexibility. As burner-tip competition grows, gas will have to be marketed more vigorously with prices more responsive to the volatility of alternate fuel prices. One way to provide this flexibility is by setting ceiling levels based on full cost allocation while permitting lower rates to be charged. Another possibility is the use of a range of allowable prices — what might be called zone of reasonableness pricing.[36]

The need for greater flexibility where regulation is relaxed is obvious, with the commissions undoubtedly maintaining a monitoring function, as noted earlier. Where regulation must be maintained, the new environment suggests a change in its focus, as well as greater flexibility. New procedures and long-term planning are required, despite the fact that existing economic, political, and social pressures make it difficult to avoid lengthy, formal proceedings and short-run expediency. Many suggestions were mentioned previously.

Other institutional arrangements also must be reevaluated. Take just one example — regional regulation. At least two state regulators (one former and one present) have urged regional regulation for the electric and telephone industries. With respect to the electric industry, former National Association of Regulatory Utility Commissioners President and Indiana Public Servic Commissioner Larry Wallace has stated:

> Our electric power regulatory system has evolve somewhat haphazardly into a crazy quilt of regula tory authorities and jurisdictions. State regulator commissions regulate the retail rates and practices c investor-owned electric utilities pursuant to laws, reg ulations, and practices in most instances unlike thos of contiguous states. Many of these utilities, how ever, are multistate enterprises. Wholesale transactior by these same utilities, even those solely within th borders of one state, are regulated by the Feder Energy Regulatory Commission under laws, regula tions, and practices established with little regard t those of the states. Jurisdiction for safety, siting, ce tification of need, and securities issuance falls som times within, sometimes without, and sometime astraddle the state and federal rate-making agencie The utilities and power pools subject to this fra mented regulatory framework frequently serve terr tories not confined to or delineated by state boun ary lines, and the related environmental and safet considerations often transcend state boundary line The result is a multitude of state and federal agenci governing the financing, construction, and return r lated to one new plant, transmission line, or eve one class of service.[37]

With respect to the telephone industry, Chairma Burke of the Rhode Island Public Utilities Commissic has stated:

> Presently the Rhode Island commission is hearing major rate case involving New England Telepho and Telegraph Company. We are required, howeve to review all operations of NYNEX in order to mal sensible cost allocations relative to setting a Rho Island revenue allowance. The complexity of the pr cess as well as the certainty that the process will repeated and duplicated in the five states whe NYNEX provides telephone service leaves this regul tor with a sense of frustration.
>
> This frustration over the wastefulness, duplicativ fragmented regulatory process strengthens my co viction that the logic on which the regional regul tory proposal is based is irrefutable. It is a moc which will best serve our new telecommunicatio environment. Its time will come.[38]

While we may shudder at the inherent political dif culties, regional regulation may well be a structural r

[35]It must be noted that there may well be significant and bona fide disagreements over such issues as timing. But there will be no major benefits from deregulation if the attitude is one that the policy is simply a "fad," and the decision is to do nothing until reregulation occurs sometime in the future.

[36]O'Connor, op cit, p. 16.

[37]"Reregulation of the Electric Utility Industry — A Neglected Alt native," by Larry J. Wallace, 110 PUBLIC UTILITIES FORTNIGHT 13, November 25, 1982.

[38]Edward F. Burke, as quoted in *NARUC Bulletin*, No. 8-198 February 25, 1985, p. 23.

form that is necessary if regulation is to achieve maximum efficiency in the coming years.

Summary and Conclusions

In the history of public utility regulation, one will search in vain for a period comparable to the last fifteen years! Fortunately, the hostile economic environment which confronted the public utility sector during the 1970s has undergone some major changes, thereby permitting focus on the second kind, the structural changes of the past few years. Inflation has been reduced dramatically; interest rates are lower. Many fuel prices have declined. The natural gas shortage of the last decade has become a surplus (and the widely discussed "fly up" or "spike" in the wellhead price of natural gas failed to materialize upon decontrol). In fact, in many sections of the country there is excess capacity in the case of electricity as well. And, except for a few — and well-known — electrics with nuclear problems, the financial integrity of the public utility sector has improved. Given these changes in the economic environment, this is an ideal time to reconsider all of the various generic proposals made during the 1970s.

At the same time, the most immediate challenge confronting the public utility sector is adaptation to the second change — structural reform. Competitive issues must be confronted and resolved, in such areas as pricing, marketing programs, and entry. Failure to resolve these issues promptly will be costly for at least two reasons. *First*, the structural reform that has been undertaken will not yield the expected benefits over costs (such as a closer alignment of prices with costs, expanded consumer choice, greater efficiency, and technological advances, and, perhaps, lower real prices). *Second*, and of equal importance, the demand for a return to traditional rate-making practices (or, possibly, for nationalization) will intensify.

Status Report from AGA on the Natural Gas Industry

Natural gas market activity in 1985 continued the trends of 1984 — the stabilization of gas supplies and prices, and the shift from traditional producer-pipeline-distributor contracts to a portfolio of transportation and purchase arrangements, according to the American Gas Association. Transported gas now accounts for about 10 per cent of gas utility volumes to ultimate consumers, compared to 5 per cent one year earlier. The one favorable trend not continued was the robust growth in gas demand of 1984. Gas demand declined slightly in 1985.

Following decontrol of some 60 per cent of flowing interstate gas on January 1, 1985, wellhead gas prices have started to decline. The "fly-up" in wellhead gas prices in 1985 that was predicted by some never occurred. The spot price for natural gas was around $2 per Mcf at the end of December, 1985, compared to $3 a year previously — before decontrol. The average price for all field purchases by pipelines is now about $2.60 per Mcf, below 1984's $2.80 per Mcf.

Natural gas prices are expected to decrease this winter (1985-86). According to pipeline filings at the Federal Energy Regulatory Commission, pipelines expect to pay on average 7.5 per cent less for natural gas (both domestic and Canadian) this winter. Residential gas prices are projected to fall 8 per cent over the October-March period compared to the same period last winter.

The short-term gas supply outlook is excellent, AGA reports. In all of 1985, about 2.8 Tcf of domestic gas production was available but not taken for a lack of market ("the bubble"). The size of the domestic natural gas surplus will tighten somewhat in 1986, to 2.5 Tcf (still about 15 per cent of production.)

Negotiated contract carriage continues to be a significant factor in gas industry operations. For the first ten months of 1985, the volumes of gas carried to end users under negotiated carriage arrangements averaged 113 Bcf per month. This represented an increase of 65 per cent compared to the same period in 1984. As a result of recent changes in regulations governing natural gas transportation, specifically FERC Order 436, negotiated carriage arrangements are in a period of transition.

The natural gas industry surpassed the 50 million meter mark in 1985. The positive developments for the natural gas industry in supply and pricing, combined with the need for electric utilities to limit capital expenditures per project and moderate growth in peak electricity requirements, presents the gas industry with a number of new market opportunities. These include commercial gas cooling, combined-cycle turbines, cogeneration, and natural gas vehicles.

COMMUNICATIONS DAILY
Thursday January 30, 1986

FOWLER PROPOSES DEREGULATING LOCAL PHONE SERVICE

FCC Chmn. Fowler made perhaps his most dramatic policy statement in common carrier area Wed., calling for national debate and experiment on deregulation of all telecommunications services, including local service. Proposal tracks closely not only policies being considered in several states that would lift much of regulation on telecommunications services, but also is corollary to Fowler's call for lifting of much of regulation in broadcast industry.

In speech at Communication Networks '86 show in Washington, and in following news briefing, Fowler provided some details and preliminary thoughts on how regulatory scheme would work. He said more details will be available in article to be published in June in Federal Communications Bar Assn. Journal.

Fowler said his model for deregulation would begin with equal access and open architecture environment in which service elements are offered on unbundled basis. After that has been achieved, Fowler said, his vision would propose: "All telecommunications services will be deregulated as to both entry and rates." Deregulation would cover "access, enhanced offerings and local facilities." Open architecture-based system "rapidly introduces the positive magic of competition into the market," he said, adding that it "provides an economic mechanism for maintaining universal service." Asked if cable then would be allowed to provide local exchange service, Fowler said it would be "hard to predict" but said cable industry could try to compete if it wished. He declined to provide details on local franchise rights and responsibilities of telcos, saying plan would be presented in fuller fashion in law review article.

Fowler's program is based on premise that regulation as known today is essentially 19th century concept applied to industry approaching 21st century. Regulation of telecommunications, at state and federal level, has cost country "billions and billions of dollars and countless lost opportunities, including productivity gains for the economy in the hundreds of billions." Fowler said he concluded that "public utility model does not always apply, and perhaps never should have been applied lock, stock and barrel to the entire field of telecommunications. It's because the PUC approach forgets to consider competition, regardless of the facts."

Fowler said glimmer of competition has been felt already in "once sacrosanct local telephone market" through digital termination systems, cellular, cable and other services: "As competitive choices increase in the local market, carriers will have to price their services at cost, improve service, offer choices -- or lose customers. Regulators must let them try."

To ensure that universal service levels are kept up, Fowler also proposed 2-part subsidy program. As general principle, he said, subsidies could "be extended not only to users of lifeline services but to other residential or small business consumers in high cost areas." His subsidy model calls for 2 questions to be asked. First, PUC (or other governmental body) has to decide whether local rates will be regulated. If so, then PUC and state have responsibility to keep telephone penetration at acceptable level--recognized

benchmark to be set as part of deregulation proceeding. It would help keep universal service rates up through targeted subsidy. On other hand, if PUC declined to regulate rates, then it would be up to telephone company to make sure there wasn't any substantial drop-off below official universal service level. Fowler said: "If we require phone companies to determine the subsidy from competitive services to residential users, they will do it in a way that produces the smallest economic distortion. So long as we require no degradation in universal service, I would give them that freedom to determine where to get the subsidy from and how to spread it." He said "close tabs on telephone penetration levels and efficient complaint resolution are a must."

Fowler's proposal contained few elements of how plan would be put into effect. At least, he said: "Time has come for a national debate, including the legislative and executive branches, over introduction of this program -- I'd like to see at least a 3-year trial before the end of the decade." Difference between this plan and divestiture, both Fowler and Common Carrier Bureau Chief Albert Halprin pointed out, is that Fowler plan would involve extensive public discussion and debate, while divestiture essentially was decided in court proceeding without much public participation.

Fowler suggested that PUCs would announce that deregulatory steps would start on particular date, when "it appears that open architecture will be generally available." He also suggested plan could be implemented on experimental basis: "Working with state regulators, the FCC could develop precise details. For instance, in exchange for state adoption of this proposal for intrastate services, the FCC might deregulate that state's telephone companies' access charges."

Suggestion that FCC would work to set guidelines was questioned by some authorities on state regulation. Genevieve Morelli, asst. gen. counsel for NARUC, said on hearing report of Fowler speech that "to infer that they can set guidelines in conjunction with the states is to assume authority they [FCC] don't have... To advocate that states initiate an experiment is one thing, to say that the FCC is going to take a role in setting up guidelines for state experiments and deregulation is quite another."

Several states already are proceeding along deregulatory path Fowler is following. Last year, limited deregulation legislation was passed in states such as Ill., N.M., Utah, Wash. This year, similar bills are expected to be introduced shortly in Ida. and have been filed in Neb. and Vt. Vt. bill essentially would deregulate all intrastate services except for local exchange service, if telcos guarantee rates for local consumers. However, Halprin said Fowler's speech wasn't result of bubbling up of deregulation moves from states, but rather was spurred by his perception of his role as chairman to help set public policy debate. Neither Fowler nor Halprin would respond to questions whether Fowler would stay around to see experiment enacted.

U S West Vp Laird Walker commented: "We think it's a foresightful statement of what needs to transpire in the competitive and high-technology telecommunications environment. We are advocating open architecture as strongly as we are able and are proceeding to implement it." Fowler's speech closely followed arguments in Computer 3 proceeding by U S West, along with IBM and others, on advantages of open architecture. Chmn. said his speech wasn't sparked by U S West comments, although he said U S West would find proposals consistent with company's beliefs.

U.S. Telephone Assn. Pres. John Sodolski said speech "appears to be a significant step forward in recognizing the need for equitable competition" in telephone industry, while Nynex spokesman called it "progressive and forward looking." Spokesman said it's in Nynex's best interests to keep as many subscribers on network as possible.

"What consumers need now is more sensitivity from federal regulators to the cost of phone service — not less," was reaction by Thomas Rogers, senior counsel of House Telecom Subcommittee. "We do not need another [deregulatory] action, which goes too far too fast, particularly when it comes to how much consumers are paying for local service. We need federal regulators to adopt a go-slow policy that avoids any more shocks to the telephone system."

Eugene Kimmelman, legislative dir. of Consumer Federation of America, said: "This is the deregulation ideologue at his best." He said Fowler was proposing deregulation of local service, in which there isn't competition. Telcos have put costs of providing service at $35 per subscriber, so pressures under deregulation would be great for local increases, Kimmelman predicted. In addition, he said subsidy program suggested by Fowler would result in creation of "an entirely new bureaucracy for welfare. That's strange for the Reagan Administration to be proposing."

Illinois Begins Tackling Deregulation

By Steven Titch

CHICAGO — The Illinois Commerce Commission (ICC) began grappling with the state's new deregulation-oriented Public Utilities Act last week amid commissioners' concerns about their power to monitor the effect of the new law and the law's effect on state telephone rates.

The commission approved requests from several small telephone companies to change rates. The companies were the first to exercise an option in the new law, which went into effect Jan. 1, that allows telcos with less than 15,000 customer lines to implement rate changes automatically 30 days after they are filed with the ICC.

No hearing is required on the changes unless 5 percent of the company's customers ask for one. The ICC previously held hearings on all small company rate changes, which had to be filed 45 days before implementation.

The ICC approved filings from Metamora Telephone Co., Metamora, Ill. and Moutrie Independent Telephone Co., Lovington, Ill., to change certain rates. The commission also approved filings from the Cambridge, Geneseo and Henry County telephone companies to change depreciation rates.

The Metamora and Moutrie filings generated considerable debate. Though approved in the end, the ICC asked its attorneys to investigate the methods the commission could use to monitor the effects the changes would have on the companies' rates of return and to ascertain that rate-payers are adequately notified on the effects of the tariff changes.

"We ought to be monitoring," said Commissioner Ruth Kretschmer. "This is a new way of doing things. Do we have a way to watch rate of return?" Kretschmer noted that the new law had no provision for the commission to grant refunds if it determined customers were overcharged by new rates.

Commissioners Kretschmer and Paul Foran, a new member of the commission, favored some sort of broad notice to customers that would break down the specific tariff changes. Commissioner Calvin Manchio disagreed, saying that such a broad notice might confuse ratepayers.

But Foran maintained his position. "Because we can't suspend and can't refund under the new law, there should be more specific notice to customers beforehand," he said.

Some frustration was evident over the way the new law tended to hamstring the commission. At one point, Commissioner Kretschmer remarked, "We have no control. Is there any way we can make [Metamora] tell its customers that this is a new act and that the ICC has little control?"

ICC Chairman Mary Bushnell, who took over as commission chair Jan. 1, asked the staff to check into ways the commission could adequately monitor telephone company business and still stay within the bounds of the new act. She asked them to return with their findings Feb. 4 at a meeting of the ICC's Telecommunications Policy Committee.

In other business, the ICC approved without debate a petition by Metromedia's Rogers Radiocall Inc., Chicago, declaring all its services competitive. The request will take in Metromedia's paging and non-wireline cellular operations, namely Cellular One, in Illinois.

Under the new public utilities act, telecommunications companies can request that any of their services—local or long distance—be considered competitive. The request can be subject to future review by the ICC.

AT&T Communications Inc. has a similar request pending in Illinois.

20A

The Demise of the Telephone Network

By ALFRED W. DUERIG

This article reveals some of the costs and inefficiencies which are a public legacy from the twin occurrences of deregulation in the telecommunications market and judicially mandated breakup of the formerly unified Bell system network. The author ends by considering steps that can be taken to assure maximum benefits for the telephone-using public, given the accomplished facts of divestiture and competition.

The integrated unified nationwide telecommunications network — those hundreds of millions of miles of intercity circuits and the thousands of switching machines interconnecting them — isn't what it used to be. It is perhaps not an exaggeration to speak of its *demise*. The loss has been a costly one, both in terms of money and service. It is the purpose of this article to explain these statements, to give illustrations of the points at issue from the viewpoint of a telecommunications network engineer, and to speculate on what the future of the network might be.

There were two distinct events which have led to the demise of the unified network, and we shall review them separately. They are (1) the introduction of competition into network provisioning, a gradual process over a 15-year period, and (2) the Bell system[1] divestiture, which went into effect on January 1, 1984.

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Network Competition — Historical Background

For most of the life of the telecommunications industry, the network over which calls are transmitted has been regarded as a natural monopoly. This principle was espoused by Theodore Vail, generally considered to be the founding father of the Bell system, in 1907.[2] It was affirmed by the United States Congress in the Communications Act of 1934, and reaffirmed in the 1956 Consent Decree which terminated the Department of Justice's 1949 antitrust action against the Bell system.

The first break in this thinking occurred with the 1959 "Above 890" ruling by the Federal Communications Commission, which allowed private companies to use available portions of the frequency spectrum above 890 megahertz for their own communications. This in itself was relatively ineffective since most companies found that continuing to use the Bell system for their communications needs was less costly and more reliable than constructing and maintaining their own network.[3] Then, in August of 1969, the FCC authorized a com-

[1]Although the terms "Bell system" and "AT&T" were largely interchangeable during the long period of unified monopoly operation, we will here use the former term to refer to the predivestiture system operation and the latter to designate the postdivestiture AT&T company.

[2]American Telephone and Telegraph Company annual report for 1907.

[3]Defendant's Exhibit No. D-17-13 in U. S. versus AT&T quotes an internal General Electric Company memorandum: "The Bell system can provide communication facilities at a lower cost than General Electric or any special service carrier can."

mon carrier, Microwave Communications Incorporated (MCI), to construct point-to-point microwave radio systems and to sell private-line services to individual users. This authority was later expanded (as the result of a 1977 court order) to include message telephone service as well. MCI (and later, others) was initially able to undercut Bell's nationally averaged prices by serving only selected high-density routes, where costs per circuit mile are far below the overall average.

From that point forward, a series of regulatory decisions broadened the scope of services which these other common carriers (OCCs) were allowed to offer, culminating in the present situation which permits virtually anyone to enter this business and serve whatever markets he wishes and at prices he chooses. The exception to this unrestricted competition is AT&T's own services — more on this later.

Some utility economists — e.g., Almarin Phillips of the University of Pennsylvania — have argued a convincing case that true telephone network competition is actually impossible.[4] Alfred Kahn of Cornell University, a noted advocate of deregulation and competition wherever feasible, has called the current "competitive" situation in the network a contrived one which cannot long continue.[5] C. Raymond Kraus, of Consulting Communications Engineers, Inc., has noted that one random access network is all that our country can afford.[6]

Competition versus Regulation

It is an accepted economic truth that when competition in any business is restricted by law, as was the case for the Bell system network until recently, regulation of rates is necessary to protect the consumer from arbitrary pricing actions. In public utility operations, competition is usually restricted by granting a franchise to a single qualified operator. This prevents the economic waste of facility duplication and permits the supplier of the service to enjoy the economies of scale and density, passing on these benefits to the consumer in the form of lower rates.

These principles were first set forth in the middle of the 19th century by the noted British philosopher, economist, and intellectual, John Stuart Mill. He determined that it was uneconomical for London to be supplied with illuminating gas (this was prior to electrical distribution) by a multiplicity of enterprises, in competition and with parallel facilities. He realized the enormous waste in the duplication, many times over, of gas plants, distribution lines, construction crews, and staff organizations. Based on his work, we can summarize some basic principles of public utility economics:

1) Competition in public utility operations is wasteful and must be prohibited for the public good.

2) Regulation of the company providing a public utility service must be carefully maintained to prevent overcharging the user.

3) The rate structure for users of the service must be based on overall costs to ensure a reasonable return on capital invested.

4) Rates for individual users or services must be based on a principle of "the greatest good for the greatest number" rather than on costs for providing individual services or users. This will maximize availability of the services.

Why the Network Is a Natural Monopoly

Under these general principles the telecommunications industry, led by the Bell system, prospered and provided superb and virtually universal service in the United States (over 95 per cent of homes with telephones). The telephone network was considered a perfect example of a natural monopoly. As von Auw has stated:[7]

> Exchange telephone service and interexchange service have an even more basic claim to being natural monopolies than does the supply of water and gas. That claim is based on the interactive character of both services. Every telephone in every exchange must be able to call and be called by every other telephone in that exchange and in every other exchange. They can do that economically only if they share a common switch or system of switches. The cost advantage of serving interactive terminals through one network rather than through two or more may change with changing technology. Always, though, assuming there are no barriers to its exercise, that cost advantage is there. It is intrinsic. Exchange service and interexchange service are intrinsically natural monopolies.

The reason that the telephone transmission and switching network qualifies as a natural monopoly is the enormous structural cost underlying it; i.e., the land, buildings, power plants, right-of-way conduit, cable, microwave towers, et cetera. The large investment in these structures mandates that the network facilities built upon them be maximized to invoke the economies of scale. An example will illustrate.

It should be obvious that a microwave radio route supplying 2,000 voice quality circuits between two points is much less costly than two parallel routes between the same points with 1,000 circuits each. In the

[4] "The Impossibility of Competition in Telecommunications: Public Policy Gone Awry," by Almarin Phillips, from *"Regulatory Reform in Public Utilities,"* by Michael Crewe (editor), Lexington Books, 1982.

[5] "The Uneasy Marriage of Regulation and Competition," by Alfred E. Kahn, *Telematics*, September, 1984.

[6] "Regulation of Communications Is Not Coping with Technology," by C. Raymond Kraus, *Telephone Engineer and Management*, May 1, 1973.

[7] *"Heritage and Destiny,"* by Alvin von Auw. Praeger, New York, 1983.

latter case, the structural costs (land, buildings, radio towers, test equipment) are exactly twice what they are for the single route. Only the incremental facilities costs (transmitters, receivers, multiplexing equipment, trunk relays) vary in cost more or less directly with the number of circuits provided. (See Figure 1.) A simple analogy would be to compare the cost of running 20 trains per day over a single railroad line with running the same 20 trains over two parallel routes. In the latter case, the structural costs (tracks, right of way, signals, stations) are doubled.

Figure 1

Economy of Scale

Microwave Radio Relay Route

A) Structural Requirements (per route regardless of size)

- Land
- Buildings
- Towers
- Antennae
- Power Plants
- Test Equipment
- Administration (Personnel and Records)

B) Facility Requirements (in rough proportion to route size)

- Transmitters
- Receivers
- Multiplexing Equipment
- Trunk Relays
- Switching Capacity

A single 2,000-circuit route will have costs of A + B.
Two 1,000-circuit routes will have costs of 2A + B.
No matter what the values of A and B, the latter costs more.

Modern technology has made much larger capacity structures possible. Consider the explosive growth (all within the last five years) of fiber optics, which allows tens of thousands of circuits to be carried in a cable little bigger in diameter than a pencil. Few facility routes in the U. S. are dense enough to fully exploit this tremendous capacity, and none can efficiently utilize the capacity of several such systems provided in parallel by competitors. Clearly, unrestricted competition produces economic waste, which can only be paid for ultimately by the consumers of the service.

Many of us have seen photographs of the clutter of pole lines and overhead wires which almost blocked out the sun in urban areas such as New York city around the turn of the century. The invention of cable and the subsequent undergrounding of telephone plant solved this and permitted telephone growth to continue. Today, we have a multiplicity of parallel facilities in the intercity telephone network, provided by the various vendors permitted by competition. We cannot see this "clutter" because modern intercity facilities are largely underground in fiber or coaxial cable, or they travel invisibly as microwave radio beams or via satellite. If we could actually see all this proliferation of unnecessarily duplicated plant, the economic costs would be obvious and a public outcry would demand an explanation. We might note in passing that these facilities are not entirely invisible — how often does one see a scenic hilltop that is not crowned by one or more radio towers and antennae?

As a specific example of this duplication of high capacity facilities, consider the fact that United Telecommunications, Inc., has announced plans for a $2 billion, 23,000-mile fiber-optic network interconnecting all major U. S. cities.[8] This is in addition to a parallel 11,000-mile network by AT&T, a 7,500-mile network by MCI Communications Corporation, and a 5,500-mile network by GTE Sprint Communications Corporation, all under construction or planned for near-term completion. This is, of course, supplemented by many thousands of miles of microwave radio, coaxial cable, and fiber-optics routes already serving these same points. No one, including the builders of all this plant, claims that all these facilities are needed. They are being constructed by each company in an attempt to increase its market share of the long-distance market.

When competition is attempted in public utility operations, the user must pay his share of the sum of the costs of all the competitors. Therefore, with all these billions of dollars spent for duplicated and unneeded network transmission and switching facilities, one would expect that the result would be higher long-distance rates. Yet, this has not happened — long-distance rates have not risen. On the contrary, some of the competitive entrants into this market (MCI, GTE Sprint, Allnet Communication Services Inc., and others) offer service to their customers at rates which are often below AT&T's. How is this possible?

The Long-distance Subsidy for Local Service

It is possible simply because long-distance rates had, over the years, been set by the Bell system at a level well above the cost of providing the service. Thus, the long-distance business, taken by itself, was an extremely profitable enterprise. (No surprise, then, that literally hundreds of companies have been scrambling for a share of it.) Why was this overcharging by the Bell system permitted in a regulated industry? Only because that same industry also provided local exchange telephone service which, taken by itself, was a real loser (who has

[8] "Therefore, Be Bold," by Barry Stavro, *Forbes Magazine*, September 23, 1985.

heard of anyone trying to enter the local exchange telephone business?).

The excess profits from long distance offset the losses in the local exchange through a process called separations payments. This subsidy has not been a minor one — it amounted to over $10 billion per year nationally.

As long as the overall enterprise earned no more than a fair rate of return, this subsidy was permitted and considered to constitute a social good.[9] After all, the heavy long-distance user, who was paying the subsidy, was either a business customer or an above average income residence customer. The receiver of the subsidy — i.e., the local exchange telephone customer who made few long-distance calls — was in the numerical majority and generally at a lower income level. In short, this process amounted to taking from the rich and giving to the poor, a la Robin Hood.[10] This bit of social engineering, devised by the Bell system and long condoned and even encouraged by Congress and the regulatory agencies, was largely responsible for keeping the cost of local telephone service within the means of nearly everyone, and has led to virtual achievement of the objective of universal service. This widespread availability of reliable economical communications was certainly a factor in the building and unification of our nation.

We see, then, that the result of the economic waste of facility duplication was not an increase in long-distance rates, but simply a rise in the underlying costs of that service, bringing these costs closer to the rates charged. This narrowed the profit margin and with it the subsidy available to support the local exchange business. The inevitable end result must be a rise in local exchange rates, some of which has already taken place. When we consider that local rates had been held at levels of one-third to one-half of the cost of furnishing the service, it is apparent that substantial increases are still to come. It is impossible to maintain subsidized rates when the subsidizing service is subject to competition.

To close out this discussion of the long-distance local subsidy, the following quote by Cyrus Colter, a long-time member of the Illinois Commerce Commission, sums up the situation:[11]

> . . . selfish interests have appeared with the clear intention of underpricing in those special areas in which regulators have heretofore kept the prices higher in order to provide lower, though reasonable, charges for the great body of household users across the country. Such competition may be good for those special interest entities which are not at all averse to competing with a regulated system. But it is not good, in my opinion, for the American public, especially the part of it which is disadvantaged — the unfortunate.

Nationwide Price Averaging

Rates for intercity private lines and message telephone service have long been set on a basis of nationwide price averaging. This is an aspect of the "value of service" concept, which long governed Bell system rate setting. Value of service means that a customer pays in relation to what a service is worth to him, rather than according to what it costs the company to furnish the service.

Therefore, the charge for a 400-mile long-distance call of a given duration and at a given time of day is not dependent on the specific location of the end points. These could be downtown Denver and Salt Lake City, a direct high-volume route costing little to provide (on a per circuit basis), or Boulder and Ogden, two smaller cities equally far apart but involving two or more intermediate switches and several interconnecting transmission facilities. The cost of establishing the latter call is at least double the former, yet the customer pays the same rate. This entire concept of pricing, of course, is undermined and subject to review when competitors selectively pick the less costly routes on which to compete.

Other Problems of Network Competition

Another illustration of the adverse effects of network competition deals with a fast growing segment of the network: cellular mobile radiotelephone service. After delaying the introduction of this service for nearly fifteen years (permitting numerous European countries to move far ahead in this field, in spite of the fact that the technology was developed in the U. S. by Bell Laboratories), the FCC decided it should be a competitive service. Two entrants were to be licensed to serve in each geographical area. In most cases, the local telephone company is one of these service providers. However, to assure fair competition with the other server, the telephone company's service must be furnished through a separate subsidiary.

[9]The subsidy of local exchange service by long-distance rates is only one of a number of such situations in the telecommunications business. Consider for example the much higher cost of providing a customer with local exchange service in a remote rural location or in a new suburban development far from the central office compared with the cost in an established urban neighborhood with distribution plant already in place. Similarly, people who place most of their local calls during the hours when network facilities are idle subsidize those who place their calls during peak hours; people who remain at one residence location for many years subsidize frequent movers, who do not pay the full cost of new installations, and so forth. One can debate the propriety of these subsidies; the fact remains that they have existed for years and without them, it is doubtful that service today would be as universally available as it is.

[10]"Social Consciousness in Communications Engineering," by C. Raymond Kraus, Institute of Electrical and Electronics Engineers Communications Society, May, 1976.

[11]"The Consequences of Competition," by Cyrus J. Colter, *Bell Telephone Magazine*, September, October, 1984.

24A

To assure this separation, barriers to communication and cooperation between the telephone cellular subsidiary and the local telephone company were erected. In Pittsburgh, Pennsylvania, for example, the cellular subsidiary, Bell Atlantic Mobile Systems, constructed a multimillion dollar No. 1A electronic switching system (ESS) in a rented building a few blocks from the existing main downtown telephone building. The latter building housed several No. 1A ESSs with more than enough idle capacity to care for BAMS' needs, but separations rules would not allow their use. Thus, the BAMS new facility was totally superfluous. Here again, contrived competition in a natural monopoly led to large unneeded expenditures. These in turn contributed to unnecessarily high rates for cellular service. Small wonder that our development of this service continues to lag behind other nations.

Who Are the Winners?

Has anyone benefited from this introduction of competition into a natural monopoly service? Certainly. It is an ill-wind indeed that blows no good. First and foremost, the competitive interexchange carriers (OCCs), who would not otherwise exist, are beneficiaries. They are free to enter or avoid any market they choose, so naturally they provide facilities only on the denser and more profitable routes, leaving AT&T to serve the more isolated areas. Also, they are required to pay the local telephone companies substantially less than AT&T pays for local exchange access, so their contribution to the exchange subsidy is negligible to nonexistent. This handicapping of one service provider relative to another was a gift to the OCCs, bestowed by the federal bureaucracy but paid for by the telephone user.

A second group which gained from the introduction of network competition is the equipment manufacturers. As was shown, many intercity facility routes have been unnecessarily duplicated. This provided a ready market for microwave, switching, and related equipment which served no useful economic or service purpose, but must ultimately be paid for by the telephone user.

The Effects of Divestiture

The adverse competitive effects previously described were set in motion by a series of FCC decisions and are independent of the court ordered Bell system divestiture which went into effect at the start of 1984. However, certain aspects of the divestiture order, promulgated as the modification of final judgment (MFJ) in early 1982 and codified in detail in the plan of reorganization (POR) in December of the same year, have created further distortions and inefficiencies in the telecommunications network. The MFJ is actually a document modifying the 1956 Consent Decree, concurred in by the Department of Justice, AT&T, and federal Judge Harold Greene, setting forth the rules under which the Bell system would be dismantled.

Unlike competition, which was introduced gradually over a period of more than ten years, the MFJ was conceived early in 1982 and implemented less than two years later. This was a very short time period for such a complex undertaking,[12] with little time to assess the implications of network planning done under extreme pressure. As a result, some regrettable decisions were made.

While implementation of the MFJ triggered a great many costs, we will treat here only the effects on the network. It should be understood that there were also massive legal, financial, and administrative costs involved with restructuring the Bell system organizationally. (A minor example is the 1,500 employees of American Transtech Inc., a company created specifically to handle the splitting and transfer of stock in AT&T and the divested companies, and over $5 million paid to the American Banknote Company just to print the necessary stock certificates.)

Local and Long-distance Traffic Separation

The MFJ decreed, among other things, that the Bell system telephone service areas in the U. S. be divided into some 160 areas, called local access and transport areas (LATAs). Service within each LATA would be the responsibility of one of the seven regional Bell operating companies (BOC), which were created by consolidations among the 22 then existing local Bell companies. InterLATA service was to be handled by AT&T and other carriers (and there were many) who wished to enter this field. This re-assignment of responsibility, along with rules prohibiting joint ownership of facilities, has led to some incredible network costs and inefficiencies. A few examples will illustrate this.

In downtown Pittsburgh, there are two adjacent large multistory buildings housing telephone switching and transmission equipment, along with associated power, test equipment, and personnel. Prior to divestiture, both were owned by Bell Telephone of Pennsylvania. Some of the equipment within each building was owned by AT&T, some by BPA, and some jointly by both with ownership ratios related to usage. The MFJ (or more precisely, the POR, which was the more detailed document) specified that building ownership would go to the company with majority ownership of the contents. Thus it evolved that the older structure, known as the Seventh Avenue building, remained with BPA, while the newer, called the Grant Street building, went to AT&T. However, very large amounts of equipment in

[12] *"Disconnecting Parties,"* by W. Brooke Tunstall, McGraw-Hill, 1985.

each building were still owned by the other company. This created numerous and very expensive problems.

For example, the Grant Street building houses a No. 4E digital electronic switching machine, which had been handling nearly all long-distance traffic in and out of Pittsburgh and the surrounding region. The POR required that BPA handle the intraLATA switching and AT&T the interLATA. Since joint ownership was not permitted, BPA had to build a new $6 million digital electronic switching machine in the Seventh Avenue building and then spend over $1 million more to transfer circuits from the No. 4E to the new machine. Now, both machines are operating well below capacity, furnishing separately and at higher cost service which had been provided adequately on a single switcher. This scenario, with variations, was repeated throughout the U. S.

This was only the beginning. There are four large multimillion dollar No. 1A local electronic switching systems in downtown Pittsburgh to provide local and long-distance access service. Three of these are in the Seventh Avenue building and one in Grant Street. These four ESSs were and would continue to be owned by BPA. Since the Grant Street building's ownership went to AT&T, BPA's use of the No. 1A in that building was to be gradually phased out, service transferred to the other three machines, and the Grant Street machine eventually removed and junked, even though it was of a modern type with considerable remaining service utility.

And there is more. Shortly before divestiture, a long planned $3 million service protection program was completed in Pittsburgh jointly by BPA and AT&T. Concerned about the concentration of all long-distance traffic on the single No. 4E switcher referred to earlier, one of the local No. 1A ESS machines was arranged to connect directly to a number of intercity circuits and interconnected with the No. 4E so that in the event of a total failure or serious overload of the latter, at least a portion of the calls into and out of the Pittsburgh area could be completed. However, the segregation of local and intercity traffic mandated by the POR required the immediate dismantling of this protective arrangement. As a result, service protection already paid for was thrown away.

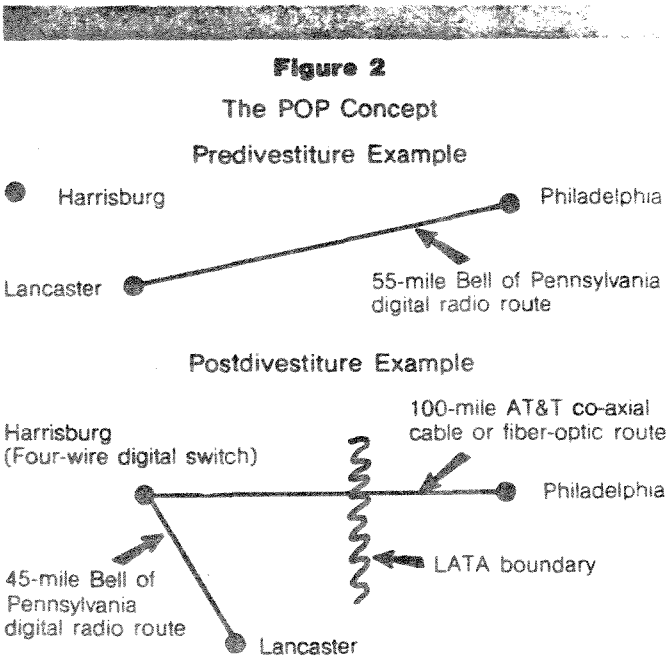
Many additional examples could be cited just in Pittsburgh where large sums were spent to comply with the local and long-distance (literally, intraLATA and interLATA) separation demanded by the MFJ and POR. The result again was abandoned or duplicated facilities. In no case did any of these actions contribute to improved service; in many instances, the end result was a definite loss of service capability. In every case, substantial amounts were added to AT&T and BPA's costs. And remember -- similar and worse economic disasters were being perpetrated nationwide.

The POP Concept

There was another unfortunate economic consequence to the divestiture mandated separation of inter- and intraLATA facilities. The integrated nationwide network had been handling all offered traffic in a unified and efficient manner, but the POR required its separation into two parts. Again, an example will illustrate. (See Figure 2.)

Figure 2

The POP Concept



The cities of Philadelphia and Lancaster, Pennsylvania, are some 50 miles apart, with a high community of interest. Telephone traffic between them called for nearly 200 trunk circuits which, shortly before divestiture, had been reassigned from a cable route to a newly built multimillion dollar digital microwave radio route, constructed by BPA, the entity then handling all intrastate telephone service. Since Lancaster and Philadelphia fell into different LATAs, this traffic now became an AT&T responsibility.

The POR permits the BOCs to interconnect with interLATA carriers only at designated points of presence (POPs). AT&T's POP for the LATA containing Lancaster is Harrisburg. Accordingly, BPA had to dismantle the newly built Lancaster-Philadelphia direct route and construct new facilities from Lancaster to Harrisburg, there to connect with AT&T facilities to Philadephia. Thus, what had been a direct 50-mile routing was now carried nearly three times that distance with an intermediate switch and divided service responsibility; furthermore, modern existing plant was scrapped and new facilities built. Service, at best, was unaffected; cost was substantially increased. As in prior examples, this situation was replicated in various degrees in hun-

dreds and probably thousands of locations across the U. S., at a total cost which is incalculable but certainly measured in billions of dollars. Who pays for this waste? No one but the consumers of the service, of course.

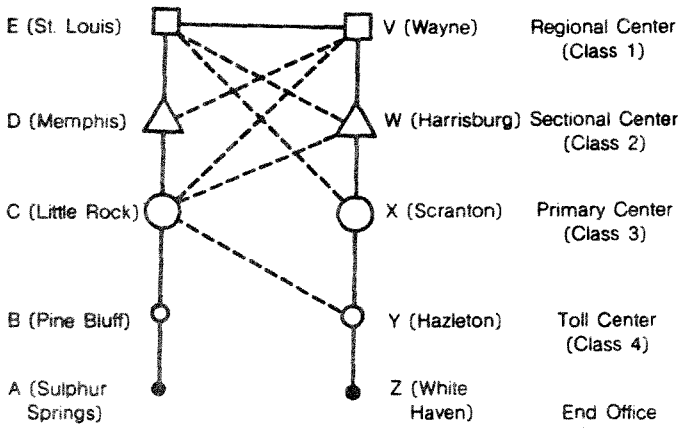
High Usage to Final Trunking

The divestiture-generated need to separate intra- and interLATA traffic and to route the latter via POPs has had still another adverse effect on the network. The unified intercity network developed and built over many years was hierarchical and designed to operate under strict rules which ensured that between any two points there was a multiplicity of routings available. So-called "high usage" trunk routes, engineered to carry roughly 80 per cent of peak-hour offered calls, overflowed their traffic to a series of less direct high usage routes; eventually these overflowed to a route of last resort, called a "final" route. The latter typically handled overflowed traffic from a number of high usage routes. (See Figure 3.) High usage route facilities were usually fairly direct and relatively inexpensive, while final routes, handling only a small fraction of the total traffic, were more roundabout and costly, with intermediate switching. This very efficient network of high usage-final trunking assured completion of over 99 per cent of offered traffic, providing a high degree of protection against overloads or network trouble conditions.

Under terms of the MFJ and POR, this network has been largely dismantled. (See Figure 4.) Now, all interLATA calls must pass through an interexchange carrier's POP. If the route to the POP, or the POP switch itself, is overloaded or encounters a failure situation, there are no alternatives and the call is blocked. Here we have taken a deliberate and decisive step toward inferior service at higher cost.

Figure 3

The Trunking Hierarchy

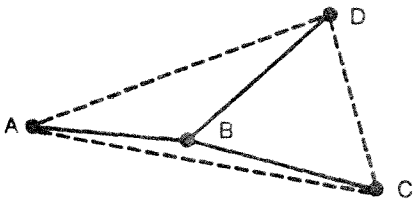


All customers are served by end offices such as A and Z above. A "final" route (ABCDEVWXYZ) exists between any two end offices in the U. S.; however, the vast majority of calls complete over one of a series of less costly "high usage" routes which are tried first in a specified sequence. Only a few of these are shown above for simplicity. In this example, the first route tried would be ABCYZ. Subsequent attempts, in order, would be ABCWYZ, ABCWXYZ, ABCVWYZ, ABCVWXYZ, ABCDVWYZ, ABCDVWXYZ, ABCDEWYZ, ABCDEWXYZ, ABCDEVWYZ, and finally ABCDEVWXYZ.

In the national hierarchy, there are only ten class 1 (Regional Center) offices, two of which are shown above. Each of these ten serves a number of class 2s, each of these in turn serves a number of class 3s and so forth. Sample city names are shown above for clarity.

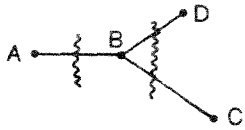
Figure 4

Trunking Arrangements



Predivestiture Arrangement — High Usage-Final Trunking

Routes A-C, A-D, and C-D above (dashed lines) are high usage, designed to carry about 80 per cent of offered peak-hour traffic. When one of these — say A-D — is busy (or defective), traffic goes via final (solid line) routing A-B-D. Likewise, high usage route A-C overflows via A-B-C. Note that A-B is designed to handle all A-B traffic plus overflows from A-D and A-C. This HU-final system leads to efficient use of facilities and, properly designed, a plus 99 per cent probability of call completion.



Postdivestiture Arrangement — POP Routing

Irregular lines show the newly established LATA boundaries. Since C and D are in one LATA and A and B each in others, all traffic in this simplified network except D-C must be handled by an interexchange carrier, which meets BOC facilities at a point of presence (POP) — B is such a point. High usage routes are prohibited A-C and A-D. As a consequence, A-C and A-D traffic is handled over longer switched and more costly routes A-B-C and A-B-D, and protection from traffic surges or equipment failures is lost. In short, poorer service at higher cost.

Many Bell system executives warned Congress, the regulatory authorities, and the public repeatedly that fragmentation of the network would not be in the public interest. AT&T's Chairman, Charles Brown, summed up the situation before a Senate committee in April, 1979:[13]

> I do not see how (the network) can be made to operate at a level even approaching its current level of proficiency, reliability, and economy in the absence of some provision assuring the continuation of unitary management.

[13]Charles L. Brown statement to U. S. Senate Committee on Commerce, Science, and Transportation, Subcommittee on Communications.

Equal Access Costs

There are still other significant costs which were added to the network as a result of the MFJ. The latter decreed that the BOCs provide, over a period of time ending in September, 1986, "equal access" to all interexchange carriers. This meant, among other things, that each central office must be modified to permit "1 + 10 digit" dialing to be used for access to the interexchange carrier of each individual customer's choice; the customer would select other carriers than his primary one by dialing a five-digit access code instead of "1."

The costs to the BOCs to make these modifications have been astronomical. New York Telephone Company alone has estimated its equal access costs at $2.5 billion.[14] This incomprehensible figure can be reduced to reality by stating it as a cost of over $300 per customer line. These costs, of course, are factored into the overall rate base and inevitably are paid for by the customer in his basic exchange rate. Projecting the New York estimate, nationwide equal access costs exceed $20 billion.[15]

These equal access modifications, when completed, will create the additional inefficiency of multiple access line groups from each central office or tandem office to each intercity carrier's POP, instead of the former single efficient access circuit group. Again, economies of scale are thrown away. All these expenditures contribute absolutely nothing to improved service; they merely provide the means to artificially introduce competition into the network. In addition to the equipment and facility costs, we should also contemplate the administrative expense of maintaining the complex records required, and the cost of several mailings to each one of well over 100 million customers to inform them of their need to individually select a long-distance carrier.

The BOCs are not the only ones with equal access cost penalties. AT&T has estimated the cost of rearranging its facilities at $2.7 billion.[16] The OCCs have also incurred significant costs. This is because the short implementation period for equal access mandated by the MFJ and POR did not permit the BOCs to do adequate facility planning. Consequently, access by OCCs to BOC end offices through centralized tandem offices — the long-range solution — had to be supplemented by a shorter-term answer; i.e., direct OCC end office connections. This forced the OCCs to spend their money twice — first to interconnect to individual offices and later to group their traffic into a more efficient tandem arrangement.[17]

[14]Robert Feldman, in *Barron's* magazine for May 11, 1983.

[15]A portion of this cost — possibly as much as 50 per cent — includes plant modernization which would have been done anyway, but probably not for a number of years.

[16]See Footnote 14.

[17]"Engineering Equal Access," by Robert F. Downey, *Telecommunications Magazine*, September, 1985.

Winners and Losers

As in the earlier discussion of contrived regulated competition, we can well ask who benefited from the MFJ-ordered dismemberment of the network. Once again, the new entrants into the interexchange market gained, for now they were able to furnish intrastate service, which the earlier FCC actions could not permit. (This had been in the jurisdiction of individual state regulatory commissions.) Likewise, the manufacturers of the equipment used to provide additional facilities, including equal access, gained. (Many of the manufacturers who benefited are overseas firms, and the additional jobs provided did little for American workers or for the U. S. balance of payments.) To these groups, we must add the army of lawyers, accountants, and bureaucrats who found profitable employment in ordering, interpreting, and implementing the structural changes demanded by the MFJ. If creation of socially unnecessary jobs was an objective of divestiture, then in this respect the undertaking has been most successful.

Who are the losers? Only the telephone users, who must pay more for less reliable service. And the nation itself, which has a less secure communications network available for national emergencies. Truly, the integrated telecommunications network, with unified design, operation, and maintenance and with end-to-end service responsibility, was a national resource which we have deliberately wasted.

How Did It Happen?

Why was the dismantling of a national resource permitted to happen?

Because policymakers, imbued with the ideal of competition, refused even to consider the possibility that a regulated monopoly in the telephone network could serve society better.

Because our regulatory agencies, our Congress, and our courts — under pressure from OCCs and equipment manufacturers — overlooked the basic economic fact that the national integrated telecommunications network was at least as much a natural monopoly as electric, gas, or water distribution services.

Because the leaders of the Bell system did not seriously believe that the government would destroy such a national asset, and therefore instead of vigorously defending the network monopoly concept and pointing out the impossibility of competition in terms clear to the average citizen, dissipated their energy and credibility by tilting at windmills such as terminal equipment registration, interconnection, and competition among equipment suppliers. These issues, while not without importance, were peripheral skirmishes which could have been negotiated and resolved without destroying the core network.

Who Gets the Blame?

Who are the culprits? There is no shortage of people and institutions to share the blame. The Department of Justice, in bringing the 1974 antitrust action, and Judge Greene's support of that action are obvious first choices. The FCC, through a series of ill-conceived rulings made over a ten-year period with little general public debate or input, surely made its contribution. The Supreme Court, by refusing to review the case, and Congress, through years of inaction, must be cited. And the Executive branch itself, by refusing to get involved, cannot be cleared of blame.

Closer to home, Bell and independent telephone company executives must realize that their actions, at best, were ineffective; at worst, they contributed to the dissolution of the network. The MFJ, after all, was a document agreed to by the Bell system; according to Chairman Brown, as the least bad of bad alternatives. Maybe so. Or possibly the antitrust case could have been pursued to a conclusion, appealed if necessary, or even dismissed under some future administration. We will never know. Last but not least, the engineers and scientists, who designed and built the great network edifice and therefore best understood its strengths and vulnerabilities, stood by and supervised its dismantling with hardly a voice raised in protest. They, better than anyone, could have alerted the public to the tremendous financial and social cost which this regrettable action would entail.

What Should We Do Now?

Now that virtually unlimited competition is permitted and the Bell system has been broken up, where do we go from here? We cannot turn back the clock; all the king's horses and men can't re-assemble Humpty Dumpty. It is clear that the future network communications business will be:

1) Moving further in the direction of deregulation;
2) More profit than service oriented;
3) More demanding on the customer to make choices;
4) Priced closer to costs (i.e., no subsidies); and
5) Without single entity end-to-end responsibility.

It does not matter whether or not we like these changes; we are stuck with them, and these facts cannot be wished away. We must accept the situation as it is and see how we can optimize network communications in this new environment. The extremely high expenditures resulting from competition and divestiture are sunk costs; they have been paid and cannot be recovered. In the unlikely event that we were to try to restore the network structure as it was, we would only incur still further costs and service disruptions.

Looking ahead, we must use the technology which is available right now to modernize our network, catching up with recent progress in Europe and Japan. This includes establishment of Voicemail services;[18] integration of the telephone and television using Videotex type services; and accelerated implementation of the integrated switched digital network (ISDN). To do this, regulatory and legal obstacles to applying technology must be removed promptly. Also, the regulatory remnants which are interfering with fair competition between AT&T and the OCCs must be removed — the present mixture of regulation and competition is not viable.

A possible starting point for planning the future would be to assemble responsible officials (being sure to include engineers and scientists) from the BOCs, the independent telephone industry, AT&T, the OCCs, the FCC, the DOJ, and other interested groups and charge them with developing a long overdue national telecommunications policy. The end result should be a clearly stated set of objectives which should include:

1) Planning toward an operationally integrated network with minimum facility duplication;
2) Promotion of universal service;
3) Making full use of available technology to maximize network utility;
4) Sponsorship of research into what the public really wants and needs; and
5) Providing for the national defense.

At the conclusion of these deliberations, Congress should act and give its stamp of approval to these undertakings. An agency should be chartered — possibly the existing Office of Telecommunications Policy[19] — to oversee the fulfillment of these goals. In this way, despite past errors and extravagances, perhaps we can re-establish a progressive and unified telecommunications network for the benefit of customers and for the nation itself.

[18]This is a family of services including centralized storage and forwarding of voice messages, installed in several locations in the Bell system more than five years ago but never placed in service because of FCC restrictions. See also "A System in Search of an Advocate," by C. Raymond Kraus, *IEEE Spectrum* magazine, June, 1985.

[19]See Footnote 10.

The Natural Gas Industry: Götterdämmerung and the Phoenix

By VINOD K. DAR

Rapidly changing conditions in the natural gas industry at the beginning of 1986 are depicted in this article as a "wave of creative destruction" sweeping the industry. Close observation of the thrust of these changes enables the author to trace the outlines of the industry that will emerge at the other end of the process.

Henry Longfellow was fond of saying, "All things must change to something new, to something strange." So it is with the natural gas industry today. The industry is in a monumental transition between two epochs. The epoch of monopoly is over. The epoch of entrepreneurship is just starting. A wave of creative destruction is sweeping through the gas industry just as it has through the financial services, telecommunications, railroad, and airline industries. As the gods of central planning slowly recede into a well-deserved twilight, the men of free enterprise are emerging to take their place. In the years immediately ahead, the competitive landscape of the gas industry will be changed beyond recognition.

For those in the gas industry who fear change this is the worst of times. For those who understand change and welcome the opportunities created by change this is the best of times. Ralph Waldo Emerson's response to Longfellow may well be, "The world is all gates, all opportunities, strings of tension waiting to be struck."

Vinod K. Dar is the president of Hadson Gas Systems, and a director of Hadson Petroleum Corporation. His entire career has been spent in the oil and gas industry. **Mr. Dar** received a BS degree in engineering, an MS degree in management from the Sloan School of Management at Massachusetts Institute of Technology, and has graduate doctoral training in economics from MIT. He is also author of numerous articles on the oil and gas industry.

One Nation, One Gas Market

The immediate and direct consequence of the Federal Energy Regulatory Commission's decision to promote nondiscriminatory access to pipelines will be the advent of universal, long-distance, gas transportation in 1986. Long-distance gas transmission firms will, after a period of confusion and adjustment about their role in the gas industry, realize that they are competing for a share of the U. S. (possibly North American) gas transportation services market and not the gas sales market. Since the supply of gas transportation services already greatly exceeds the demand for gas transportation, there will be genuine competition for transportation services. Moreover, relatively minor investments in compressors, dehydration units, spur lines in the field and service lines in the market, and short connecting lines between the mainlines of transmission companies, can substantially reduce bottlenecks in the current transmission network, further increasing transportation capacity. It will be possible, in the future, for a willing purchaser of gas anywhere in the country to acquire supplies from a willing seller virtually anywhere else in the country. The fractured, regional, highly segregated gas market that today so frustrates free commerce in gas will be replaced by an integrated national market for gas. Before the decade is out an integrated U. S.-Canadian gas market is likely to emerge.

As the gas market undergoes a metamorphosis in the

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next few years so will the role of the gas pipelines. A long-distance gas transmission company performs four functions:

1) *The Merchant Function* — where the pipeline purchases gas at the source of supply and resells it at the point of need.
2) *The Transportation Function* — where the pipeline moves the gas from the source of supply to the point of need.
3) *The Inventory Function:* — where the pipeline uses (a) field or market storage to smooth out the considerable seasonal variations in load with the more stable supply of gas, and (b) line pack to accommodate hourly, daily, weekly, or monthly variations between the amount of gas received and the amount redelivered.
4) *The Accounting and Control Function* — where the pipeline provides a range of essentially bookkeeping functions such as gas control, metering and measurement, invoicing and disbursements, and distributes run statements to suppliers, shippers, and customers.

Over the next three to five years these four functions will be substantially unbundled and each service will be priced explicitly and separately. The merchant function will become a rapidly decreasing source of revenues and profits for pipelines as this function is increasingly performed by independents such as marketers, brokers, gas producers, and shadow pipelines. The eclipse of the merchant function will be accompanied by rapid growth in the transportation and exchange (T&E) function. Transportation will become the dominant source of revenues and profits for pipelines. The big, integrated "superpipelines" being created by mergers will also enjoy substantial revenues and profits from their storage services. Indeed, the superpipelines may well manage, as contractors, the storage, gas control, and accounting functions for small, regional pipelines who may choose to contract out the supervision of these functions and thus reduce overhead and duplication.

Transportation Will Be a Many Splendored Thing

The free trade in gas transportation will be accompanied by a veritable glut of capacity for shipping third-party gas. Most gas transmission pipelines will find that the shipment of gas for resale will plummet over the next two to three years, while shipments of third-party gas will rise, perhaps accounting for 60 per cent to 70 per cent of all gas transported.

The abundance of transportation services, accompanied by increasingly vigorous competition for transportation market share among pipelines, will result in myriad and creative pricing of transportation services. Certainly, peak and off-peak pricing will be common, as will seasonal pricing. There may even be brief "sales" of transportation services to seize market share. Moreover, pipelines that find certain segments of their system markedly less used than other segments may resort to discount tariffs for these segments. It is surely not beyond the ken of some ambitious marketing manager of transportation at a pipeline to conceive of a "frequent shipper" program to build "brand loyalty" to a pipeline.

There will, of course, be the familiar and traditional firm and interruptible transportation services. In addition, "standby" transportation services may be offered. The standby service may be available for a month, a week, or even a day. It could be offered by pipelines who find that after serving their firm and interruptible customers, they still have surplus capacity. The standby service will have the lowest priority and will be available at true marginal cost, probably a penny per 100 miles per million Btu (MMBtu) of gas. This service will attract the very large, sophisticated, and nimble customer in a position to substantially increase takes for brief periods. The standby service will be a true spot transportation service with the spot rates quoted daily over an electronic network and published in the trade press. Eventually, "futures" prices for transportation services thirty, sixty, and ninety days in the future will also be established and by the end of the decade traders will conduct a thriving business trading pipeline space under both spot and futures contracts for transportation services.

A Price for All Seasons

By early to mid-1986, spot gas prices will stabilize, become seasonal, and converge. The integration of regional gas markets into a coherent national market will cause rapid convergence in the prices paid by gas users who purchase directly from producers.

By the spring of 1986, the delivered prices of directly purchased gas at the citygate of a local distribution company (LDC) or the plant gate of an industrial facility directly tied to the main line of a transmission firm could be in the range of $2.75 per MMBtu and the price of directly purchased gas delivered to the plant gate of a large gas user served by an LDC could range between $3.15 and $3.50 per MMBtu in most states. Currently, prices as high as $5.50 per MMBtu are frequently paid by industrial users in some states. An additional factor that will cause convergence will be the enormous pressure from gas consumers in states where LDCs now have transportation tariffs of 75 cents to $2 per MMBtu to have these tariffs reduced substantially. In 1986, the public utility commissions of these states may find themselves caught in a relentless cross fire from LDCs and gas consumers.

Seasonal pricing will become commonplace in 1986. After reaching bottom in the spring of 1986, prices will exhibit a seasonal swing of 20 to 30 cents per MMBtu. Seasonal lows will occur in mid- to late spring and late summer-early fall. Seasonal highs will occur in mid-summer and mid- to late winter (with winter peak prices higher than summer peak prices) corresponding to surges in air-conditioning and heating loads. In real terms, there will be very little increase in average gas prices between 1986 and 1990.

Local Excitement

The direct sale market for gas will blossom in 1986 as medium to large gas consumers, mostly industrial enterprises, rush to take advantage of their new freedom to purchase gas directly from producers, marketers, or brokers. However, LDCs, realizing that they too can purchase substantial quantities of gas directly will enter the spot or semispot market with enthusiasm. Gas purchasing as a strategic weapon will be discovered by many of the large LDCs. Over time, the more enterprising LDCs will become accomplished at direct gas purchasing and drive down their gas costs and hence rates to industrial gas customers. Several of the smaller, more cautious industrial gas users will then find that the new, lower sales tariffs will eliminate the need for direct gas buying and switch back to buying gas from their LDC.

In the late 1980s, however, as LDC carriage rates fall because of relentless pressure from industrial gas buyers and gas buying cooperatives, gas consumers will conclude that the LDCs are, after all, only middlemen just as the pipelines are today perceived by many industrials as being middlemen. The industrials who leave the direct purchase market in late 1986 and 1987 will probably troop back into the market in 1988, deciding that they can, after all, do better buying gas directly. LDCs will, inexorably, become transporters with their sales service obligations reduced correspondingly. By the end of the decade the sales service obligations of LDCs may have fallen to about a quarter or third of their obligation today, being replaced by a combination of firm and interruptible transportation service obligations. How rapidly these metamorphoses occur will, of course, depend vitally on the perceptions, predilections, and regulatory philosophies of the state public utilities commissions (or their equivalents) in each of the lower 48 states.

The more innovative LDCs will establish a menu of services for their industrial and large institutional-commercial customers. These services will, at a minimum, consist of transportation with and without system supply backup, gas buying with the LDC acting as a purchasing agent for its customer for a fee, and gas buying for its customers through an unregulated gas purchasing-trading subsidiary that purchases gas directly in the field, and for a fixed fee, resells this gas within the service area of the parent LDC.

New Stars In the Gas Firmament

In the years ahead the natural gas business will be relentlessly market driven. The new stars of the industry will be:

a) Megamarketers, who will have the ability to serve several dozen end users and LDCs across the country with supplies purchased in every significant gas producing region. The megamarketers will be the mature version of today's incipient marketing firms. To reach megamarketing status a firm will need to move 250 million cubic feet per day (MMcfd) to 300 MMcfd. Only a few firms will reach this status. Most marketing or pseudomarketing firms in business now will be consigned to competitive oblivion.

b) Producer-gatherer-marketers (PGMs), such as Hadson Gas Systems, Inc., who will combine a small to modest exploration and production base with extensive gathering lines that control large amounts of third-party production, and possess superb marketing, customer service, and transportation skills. There will be less than half a dozen successful PGMs but the successful ones will control and market 300 MMcfd to 600 MMcfd and generate vast amounts of cash flow. The PGMs will be adept at closing on long-term, known price contracts with industrial customers, and will routinely use the emerging gas futures market to hedge against price and transportation risk.

c) Niche marketers, who will serve highly specialized, small but very lucrative market segments such as schools, hospitals, universities, large commercial and residential complexes, bakeries, military bases, gas buying cooperatives made up of small industrial users and commercial establishments who can pool their loads on a specific large LDC, and, of course, small LDCs themselves. Each of these segments will require specific and tailored services.

d) The transportation and exchange departments of three or four aggressive superpipelines. These successful T&E departments will become significant profit centers and will be characterized by innovative transportation tariffs, the ability to respond rapidly to requests for service, and a strong competitive urge to seize market share at the expense of the more comatose T&E departments in commercially lethargic and strategically inept pipelines. The star T&E performers will have the knowledge and skills to move gas from any production area in the country (excluding, of course, Alaska) to virtually any market at least cost.

One of the concomitant losers in the new gas indus-

try will be many of the unregulated trading subsidiaries also known as shadow pipelines, also known as marketing affiliates of long-distance gas pipelines, that have proliferated in the past two years. These entities have two things in common: They are staffed by people who often hold positions in the parent pipelines as well, and their competitive edge comes from the selective and often discriminatory transportation and gas control practices of these parent pipelines. With the end of discriminatory transportation and the emergence of pipeline T&E departments as significant profit centers, many of these shadow pipelines will vanish unless they can wean themselves away from their parent pipelines. Just as inefficient industries that thrive behind high import tariffs cannot withstand the bracing wind of free trade when tariffs and trade barriers are lowered, so too will many of these unregulated subsidiaries be swept away by the gale of competition and free trade about to blow through the gas industry.

Another casualty of change will be the small (or even medium) independent gas exploration and productions firms whose excellence in exploration is in sorry contrast to their ineptness in marketing. Many such hapless firms, spawned during the fantasy years of inexorably rising gas prices and 90 per cent take-or-pay contracts, will either become bankrupt, liquidate, merge, or be acquired.

The more perceptive independents will bow before the strategic imperative of a market-driven industry and band to form producer cooperatives. These cooperatives will pool the production from several wells and either offer attractive packages of supply to the PGMs or go a step further and actually lay their own gathering lines and offer production packages of two to 20 MMcfd to the niche marketers and the megamarketers. Gathering line joint ventures among the bigger producer cooperatives and the PGMs are also a distinct possibility.

Exit Kafka; Enter Jefferson

In the natural gas industry the world according to Franz Kafka is being replaced by the world according to Thomas Jefferson.

To executives and managers in the gas industry who bemoan the end of the soft life and the easy successes of the past few years, I recommend the following excerpt from a letter written in 1790. In that letter Abigail Adams wrote to Thomas Jefferson, "These are the hard times in which a genius would wish to live. Great necessities call forth great leaders."

EDITOR'S NOTE: This article was adapted from a presentation by the author at an October, 1985, symposium of the Institute of Gas Technology.

A Current Gas Industry Appraisal

"Just one year ago at this time, many Americans were concerned about wild predictions of a sharp rise in natural gas prices, as the final layers of federal field price controls were about to be lifted on newly discovered gas. Those price rises never came. One year later, the gas industry faces new regulations on gas transportation and continued federal statutory constraints on demand, at a time when oversupply and take-or-pay obligations are the main problems. However, as in the past, the natural gas industry will overcome these obstacles to retain its position as the provider of America's premium fuel.

"During 1985, America's 160 million gas consumers received continuing good news about natural gas supplies, declining gas prices, and increasingly accepted new market equipment and technologies. These items are the true mark of the past year in the natural gas industry.

"Residential gas prices this winter will be an average 8 per cent lower than last winter, with American Gas Association projections showing continued price stability through the rest of the decade.

"Natural gas continues to hold a competitive advantage in pricing, compared to oil and electricity. On a national average, natural gas continues to cost some 30 per cent less in the residential market than heating oil, while heating with electricity continues to cost about twice as much as natural gas. Natural gas is most economical in many applications due in part to the inherent efficiency of the million mile underground pipeline transportation system and the cleanliness of natural gas when burned.

"Unfortunately, the regulatory and legislative morass has somewhat diverted natural gas industry attention and momentum from the outright bullish growth we and our 160 million consumers should be enjoying. However, we remain fully confident these matters will be resolved and the gas industry will retain its rightful place in the market and build upon its long record of consumer service.

"As America's best energy choice, natural gas is well positioned to meet the challenges of increased competition despite continuing regulatory problems. The natural gas industry enters 1986 on a very positive note composed of competitive prices, a very strong supply outlook, outstanding environmental advantages, flourishing technology, and a superior product."

—From a 1985 year-end statement by George H. Lawrence, president of the American Gas Association.

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Volume 258—No. 42,709
Wednesday, October 9, 1985

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Editorials

Gas Pipe Carpetbaggers

Some of North America's biggest natural gas companies are scrambling to win a piece of the most important new gas market on the continent. Unless the Public Utilities Commission takes care, the interests of California gas customers could get trampled in the rush.

The scramble is over the right to deliver natural gas to the companies — among them Chevron, Shell, Texaco — that pump heavy oil from beneath the San Joaquin Valley. Because the oil is so gooey and waxy, steam must be injected into the wells to get it out. Mostly, the companies have burned oil to make the steam, but air pollution problems are now pushing them to burn natural gas instead. And as the oil production increases, they will need lots of it: Pacific Gas & Electric, which wants to serve part of this new market, estimates that the potential demand for gas in California oil recovery operations is 1 billion cubic feet a day, or almost as much as PG&E currently sells to all of its other customers combined.

The potential size of the market has drawn competitors for PG&E and Southern California Gas, the two utilities currently serving the region. Two groups have proposed to the Federal Energy Regulatory Commission, and a third is considering, building interstate gas pipelines into the oil fields. The pipelines would carry, for a fee, natural gas already owned by oil companies. The interstate pipeline companies argue that they can offer better service and lower prices to the oil recovery market than PG&E and SoCal, which are state-regulated.

But the pipelines are potentially a bad deal for most California gas customers. By cutting PG&E and SoCal out of the biggest new market in the state, they would deny current customers the rate advantage that would come from having the oil companies pay some of the fixed costs of the utilities' existing gas distribution networks. And though they say it is not their intention, there is also a possibility that the interstate pipelines, once here, would attempt to lure other big industrial gas users away from the utilities, forcing residential and small-business customers to carry a greater share of those fixed costs. It is in the public interest for the PUC to keep the pipelines out.

The best way to do that is to free PG&E and SoCal to offer the oil companioes a deal they can't pass up.

PG&E has proposed that it be allowed to offer flexible sales contracts to the oil recovery market, but the oil companies aren't interested; they just don't want to buy gas from PUC-regulated companies. More promising is SoCal's proposal to the PUC. It wants permission to offer gas transportation contracts, in which the utility would, like the interstate pipelines, deliver gas that the oil companies already own. That ought to be attractive, since the utilities, with distribution networks already in place and partly paid for, presumably can offer the oil recovery market a lower price than the upstarts from out of state.

This solution is not without difficulties of its own. For example, it is unclear whether the PUC can legally authorize gas transportation for one set of customers — the oil recovery operations — without making it available to other big industrial users, who have been clamoring for it.

But those difficulties pale beside the prospect of losing the potential benefit to consumers of having the state's utilities serve the biggest new gas market on the continent. Swift PUC action to authorize gas transportation will send FERC and the oil companies a signal that California doesn't want or need a wasteful and duplicative interstate pipeline to serve the oil fields.

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Entrepreneurs Are Changing the Shape of Electric Utility Industry

By RICHARD MUNSON

America needs to encourage competition within its electricity market.

The regulated monopolies' inaccurate projections of the demand for electricity have forced the cancellation of at least 180 proposed power plants—more than the combined electric generating capacity of Texas and California.

In addition, the construction of over-budget nuclear reactors has raised rates in many states. And, at least a half dozen power companies across the country teeter near bankruptcy.

The answer to the problem lies with energy entrepreneurs, who exist today because the marketplace demands alternatives to the utility monopolies' power. But the independents needed an act of Congress to eliminate a 70-year-old requirement that only regulated utilities could sell electricity to consumers. And because of that legislation, the electricity market's monopoly structure is opening to competition, a shift that promises to lower costs, spur technological innovation and foster economic development.

Richard Munson is a Washington-based energy writer. His book, "The Power Makers," was published last month by Rodale Press.

The emerging independent power producers—who co-generate heat and electricity, burn wastes and harness the sun, wind, geothermal steam and hydropower—are beginning to comprise one of the nation's fastest growing industries.

Although dismissed only a few years ago as backyard tinkerers with limited potential, these electric entrepreneurs now form a multibillion-dollar industry that includes hundreds of new firms as well as growing units within some of America's largest corporations.

Legislative change came in the late 1970s, when the Carter Administration and Congress sought ways to reduce U.S. dependence on oil from the Organization of Petroleum Exporting Countries by encouraging industries and individuals to invest in co-generation systems, windmills, hydroelectric facilities and other small power technologies.

In 1978, Congress approved the Public Utility Regulatory Policies Act, which allows independents to sell electricity to their utilities on favorable terms and to interconnect with the utility grid and buy back-up power at a reasonable cost.

As the legislation was being debated in Congress, the utilities didn't take the independent producers seriously, immodestly assuming that only utility engineers could construct and operate electric generators. Instead, the utilities focused their lobbying efforts on other issues such as rate reform.

But after the law was signed and new businesses began to challenge their monopolies, power companies filed a series of lawsuits to block the law's implementation.

The challenges even reached the Supreme Court, which in May, 1983, unanimously upheld the legislation, ruling that it "[was] designed to encourage the development of co-generation and small power production, and that ratepayers and the nation as a whole would benefit from the decreased reliance on scarce fossil fuels and the more efficient use of energy."

In California, perhaps the only state where local officials have fully implemented that legislation and exposed the utility industry to some competition, the results testify to the open market's effectiveness in stimulating development. In January, 1982, independents supplied only 100 megawatts of the state's electricity.

Three years later, they had installed 1,659 megawatts of power plants, about the equivalent of two medium-sized nuclear reactors, and were constructing another 9,165 megawatts, enough to boost the output of independents to a whopping 25% of California's current electrical capacity.

Independent power producers are not limited to the West Coast, however. Similar growth is occuring in Texas, Michigan, Florida, New York, New Hampshire and in other pockets across the country where utility rates are high.

In Houston, for example, co-generators added 1,300 megawatts, more than a large nuclear reactor, between 1982 and 1984. Later in this decade, they plan to supply almost 6,000 megawatts of electricity, more than half of what is needed to supply power to metropolitan Houston.

Independents claim that utilities will never again build centralized power plants because entrepreneurs can supply electric capacity faster, safer, cleaner and more economically than can utility monopolies.

They contrast, for example, the rise of independents with major utilities' projects such as the construction of the Diablo Canyon reactors. Electric entrepreneurs installed as much new capacity in less than one-fifth the time, without an eightfold increase in the planned budget—and without protests from environmentalists.

Moreover, the new diversity promises a more reliable and economical approach to supplying enough energy in an era when the demand for electricity is uncertain.

Most utilities still claim that electric entrepreneurs and alternative energy technologies have very limited potential. In fact, the program at the utility industry's 1984 convention failed to even mention the new multibillion-dollar enterprise.

The more thoughtful utility executives, however, are slowly changing their minds. They find that buying electricity from independents is more economical than building their own central power stations.

It makes more sense—many firms have admitted publicly—for entrepreneurs to risk their capital than for the power company to finance expensive new facilities.

Independent power suppliers enjoy growing support. Wall Street investors, for example, prefer innovative businesses to utilities that continue to build large power plants. The blend of efficiency and dispersed generators also pleases environmentalists, who have been trying to warn Americans of the dangers of acid rain and nuclear wastes. And, the diversity of growing companies also promises workers more jobs than

Cogenerated Power Irritates Utilities

Growth Could Hasten Industry's Deregulation

By Bill Richards
Staff Reporter of The Wall Street Journal

ENDERLIN, N.D.—In the boiler room of Sun Industries Inc.'s sunflower seed processing plant here, the heat is stifling. But Schlomo Nadel, the Israeli-born engineer who designed the plant, smiles as he sweats. Heat, Mr. Nadel assures a wilting visitor, is money.

Sun is a cogenerator. The company burns sunflower hulls and chaff to make steam, which it puts through turbines to generate more electricity than it needs for its own sprawling operation here. The leftover power is sold to the local utility, Otter Tail Power Co., at a profit of as much as $3,000 a day.

"Not a bad deal," boasts Mr. Nadel, who has a tiny sunflower on his hard hat. "We make our profit on the stuff everyone else throws away."

These days, cogenerators like Sun are tossing almost anything on the fire. One West Coast cannery makes power by burning peach pits. Monfort of Colorado Inc., the big beef processor, plans to generate electricity from cow manure. Many other companies, including Dow Chemical Co., produce surplus power from large plants using such conventional fuels as natural gas and coal.

Fivefold Rise Is Forecast

Not long ago, cogenerated power was barely a factor on the U.S. energy scene. But it has grown to the point where it currently accounts for 2% to 3% of the nation's total energy output, and federal energy officials predict as much as a fivefold increase by the end of the century. California, the nation's most active cogeneration state, already has enough homegrown electricity for sale or on the drawing boards to equal the output of 18 nuclear plants.

Indeed, the pace of cogeneration's growth already is shaking up the traditional utility industry, and some experts predict it could ultimately hasten deregulation of the entire industry.

Cogeneration also has some utilities sputtering. When Chicago announced this month that it was considering building a garbage-burning cogeneration facility to save money on electric bills, Commonwealth Edison Co. retaliated by threatening to move its headquarters—and $140 million in annual tax revenue—out of the city.

"We are starting to see some hostility," says Michael J. Zimmer, general counsel for the Cogeneration Coalition of America, a Washington, D.C.-based trade group. Utilities, he says, view cogeneration as "an infringement on their historical service areas."

'Small Potatoes'

"For years, utilities thought cogeneration was small potatoes, if they thought about it at all," says Ralph Cavanagh, a senior staff attorney and energy specialist for the Natural Resources Defense Council, an environmental group. "Suddenly, the stuff came foaming out of the woodwork."

There is a streak of irony in cogeneration's rapid growth. In the late 1970s, while President Jimmy Carter was warning of an impending energy crisis, most planners focused on building mammoth power projects. Cogeneration was an afterthought. Federal lawmakers in 1978 even gave small power producers a friendly push, telling utilities they had to buy surplus power made from windmills, small dams and cogeneration. The utilities grumbled at the nuisance but accepted the trickle of electricity.

Nowadays, many of those big projects are mired in debt and the energy crisis seems to have evaporated. Cogeneration, however, is booming.

In fact, some utilities, awash in unwanted and unneeded power from cogenerators, are rebelling. Five of Iowa's seven utilities recently took their case to state court after failing to convince the Iowa Commerce Commission that the rates they had to pay cogenerators were too high. The case is still pending. Similar complaints have cropped up in courts of a half-dozen other states. California, Montana and Idaho have clamped moratoriums on new sales of most cogenerated power while they attempt to work out equitable buyback systems.

One big utility concern is that an end to the current energy glut could drive up fuel prices in the future and cost cogenerators so heavily they would have to renege on supply contracts and drop off of utility systems. But that prospect doesn't worry some federal energy officials. "The utility can always take the facility over and operate it," says one.

State Regulators

A more immediate utility concern is that federal oversight of the cogeneration program has been inadequate and confusing. The Public Utility Regulatory Policies Act of 1978 required utilities to buy surplus power from cogenerators. But the law left it up to the Federal Energy Regulatory Commission to make the rules for the buybacks. After suggesting that utilities pay cogenerators as much as it would cost to make the power themselves, the commission turned the job over to state regulators.

Twenty-three states have roughly followed FERC's "avoided cost" guideline. "The rest," concedes a federal energy official, "are all over the lot."

Idaho, for example, in an effort to encourage cogeneration, ordered Idaho Power Co. to pay small power producers more than three times what it cost the utility to make power from its own extensive hydroelectric system. Not surprisingly, cogenerators swarmed to take advantage.

"We had an Oklahoma land rush," says Bart Kline, an Idaho Power attorney. State regulators cut the spread sharply after Idaho Power went to court, but the utility says it still faces the prospect of having to charge ratepayers for large amounts of cogenerated power it won't need until 1998.

State courts have been equally fuzzy on the buyback issue. Last year, courts in Kansas and New York took opposite positions on whether local utilities were bound by FERC's avoided cost guidelines. "Our customers are subsidizing cogenerators, but we're complying with whatever regulations are in effect," says an official of New York's Consolidated Edison Co.

Federal regulators defend the system. "As far as we can tell, the program is doing what it's supposed to be doing," says Edward J. Fowkes, director of FERC's cogeneration program. He says the program was designed to encourage cogenerators to compete with established utilities. Mr. Fowkes says some utilities may have more cogeneration competition than they anticipated, but if state regulators followed FERC's guideliness there would be far fewer complaints from utilities. "Utilities are concerned about competition, but that's what Congress wanted."

Rough and Tumble Market

Oversupply has already turned Texas into a rough and tumble market for cogenerators, especially along the Gulf Coast, where petrochemical operators have Texas-sized power plants that can churn out enormous amounts of surplus power. Houston Lighting & Power Co. recently signed a cogeneration contract with Dow Chemical's sprawling Freeport petrochemical complex that will deliver enough electricity to service nearly 300,000 houses during the utility's peak summer period. The Houston utility has signed three more big cogeneration contracts as well.

"Down here that avoided cost stuff doesn't mean much," says Carlton Jones, president of Houston-based Resource Planning Consultants. "The market has taken over as far as setting prices."

As a result, Gulf Coast cogenerators, looking farther afield for markets, are "wheeling" their power across rented utility lines to customers hundreds of miles away. By 1994, utility experts calculate Texas cogenerators could have four million kilowatts of surplus power for sale—the equivalent of four nuclear plants, or enough to run a city the size of Corpus Christi.

"Houston," says City Councilman Dale Gorczynski, an enthusiastic cogeneration backer, "is the Saudi Arabia of cogeneration potential."

Some state regulators aren't as enthusiastic about Texas's bounty. Donald Vial, chairman of California's Public Utilities Commission, says that unfettered wheeling of cogenerated electricity could give cogenerators an unfair edge on the open market. Cogenerators could undercut regulated utilities, cutting into their market. That could cost utilities customers and force them to raise rates for those customers left on the systems.

So far, Texas regulators have only allowed cogenerators to wheel power to regulated utilities, giving state regulators at least partial control of the system. But, warns Mr. Vial, "When you get into wheeling, you have the potential for bypassing the whole regulatory process. We're not ready to take that step yet."

Assembly Committee
on
Utilities and Commerce

UTILITY REGULATION IN FLUX:
THE MONOPOLY FRANCHISE, PRIVATE SERVICE,
AND THE PUBLIC INTEREST

State Capitol
Sacramento, California
February 5, 1986

CHAIRWOMAN GWEN MOORE: Members of the Committee, today's hearing asks a vital question: what is utility service? We take it for granted. Today, the regulated utilities are accepted as a part of California's economic scene. But, this has not always been the case and it may not be the case tomorrow. Strong pressures are being asserted in Washington and in the state capitols to revise our conception of utilities and to amend or abolish statutes governing their regulation. As provided by the utilities, transportation, fire, gas, electric, telephone, and water have been the bedrock on which our national and state economies could develop. Today, competitors challenge the utilities' monopoly franchise who exclusively provide these services by offering them on a private basis. These competitors say that the services they provide are different from the utilities, because they do not serve the essential public needs.

By the passage by initiative of the Railroad Act of 1911, the Railroad Commission, later renamed the Public Utilities Commission, assumed responsibilities for regulating vital services in California.

The state averted contining chaos in the provision of essential public services. The Public Utilities Commission and its mission are now enshrined in the State's constitution.

Recent federal policy, some preemptive in nature, has forced the Public Utilities Commission on the defensive and called into question state utility regulation.

Our hearing will explore the nature of utility service. If there are areas where competitive forces can play without doing the public harm, we in the Legislature should know about them. But if there are vital services whose public provision is jeopardized by untoward competition, competition that serves only the largest and economical most powerful among us, we must be prepared to do what is necessary to assure that affordable public service availability continues.

We will now have our first panel. I'd like to introduce at this time Barbara Barkowitz, who is a former director of the PUC Policy Division. She is going to give us little background on the changing nature of utility regulation.

MS. BARBARA BARKOWITZ: Thank you, Assemblywoman Moore and members of the Committee. It is a delight to be back before the Legislature again.

I approach the subject with some trepidation only because I think that you today there are going to be more questions than answers.

As you pointed out, right now, with respect to regulated utilities, we have departed from a classic monopoly position, which was largely brought about by economy of scale and integration. It is very important to consider integration in addition to economy of scale because we have companies which were vertically integrated for a very good reason. It was the most economical and efficient way at that time of providing new services. Disintegration, if you will, may more be the order of the day.

The monopoly position was based on uncontested service territory. It is important to realize that the integration economies were spatially distributed in such a way that it made sense for one utility to serve one geographical area in addition to being vertically integrated. That resulted in a situation where the utility had an obligation to serve, to provide what was ever needed by anybody who entered that particular service area and requested service. Now, it wasn't that it had to provide any service at all times. It had to provide reasonable and adequate service and was compensated reasonably for the provision of that service.

If you look at the pieces of the utility structure that used to be vertically integrated, certain strata, if you will, may now

allow for competition. That has to do with the changing nature of the market and the introduction of technologies which also make possible competition. Telephone users, for instance, can bypass the system entirely and some are permitted to bypass in the area of long distance. Electricity users can bypass to the extent they can self-generate. That is, they can drop off the system entirely.

It is gas users who have the strongest link to a system, because they have not found a way of getting natural gas without transporting it via the utility. So, there is more of an umbilical there than in either of the other two areas.

What this suggests, is that, to borrow a term from telephones, we are beginning to see the unbundling of utility services -- the breaking out of those different services that used to be packaged together. We can decide which ones should be subjected to concomitant market forces, and which ones, at least thus far, by definition cannot be.

This raises some interesting questions. If certain market segments can be subjected to competition, do you let other suppliers compete? And if you do, what does that mean in terms of the utilities' obligation to those current customers who choose to receive service by alternative means?

CHAIRWOMAN MOORE: I was just going to say I hope Duncan [Wyse] is paying attention, because I know he has the answers.

MS. BARKOWITZ: I'm sure he does. I know he is going to come up with a brilliant way of resolving all these problems.

We may have to redefine what we mean by the word "service." It seems to me that there is a difference between the customer who has always been tied to the utility and agrees to continue to be tied to the utility, and customer who chooses to take advantage of alternatives. In case of those customers who do try to take advantage of alternatives, perhaps one needs to redefine service in terms of "access, a word you are familiar with in your telecommunication area. In essence, it is very similiar to the service provided by gas transportation. It says that if you choose to go elsewhere, then the one thing that the system has to provide you is access to some source of supply. But it no longer has to provide you that actual supply.

The next question that comes up is, what if the cutomer wants to come back? What if she decides to have her fling and she decides she doesn't like taking service elsewhere; she decides she really wants to come home. What then is the utility's obligation? From a capital point of view, one needs to think what that obligation should be. It is pretty clear that a capital investment would be required in order to provide service for those customers who might choose to come back. Those customers who are now on the system shouldn't be obligated to retain that level of service on the off chance that somebody else is going to use it. There are some real equity issues between

core customers and outside customers, if you will, and potential future customers. Some of these issues could be dealt with with through creative rate design, standby charges, reservation charges, and long-term contract obligations where a customer can sign up for service at some point in the future, but has to pay a price for the privilege of coming back. Contracts like that are not uncommon in other areas, and there is no reason why they couldn't be drawn up in the utility area, although it would be somewhat different from what we have been doing thus far.

Another option is an insurance-policy approach. Through diversification of risk, people could buy insurance to be able to get service at a future time.

In summary, the market could evolve to allow for a better flow between existing customers and future customers or part-time customers -- and I think we will see this in the natural gas market and maybe, ultimately, in the electric market -- if we can create a market like we have in the financial market, which is a futures market. If you had some kind of continum between the spot market and the future market, with the possibility of long contracts, as have in foreign exchange, were customer can come and go. The market would value a service based on the terms of the contract and the viability of the service. That might create some kind of cooperation in which one could function. It could very likely happen in the natural gas market over the next couple of years.

It is a lot harder on the electric side, for a couple of reasons. One is that you have a much bigger problem with service integration. Two is that instead of having producers and a system of distributors linked together by a transportation system, you have a really complicated set of providers of service. You've got municipal utilities and privately-owned utilities and QFs (independent power producers). These players are in disagreement over things like access, hydropower, and the circumstances of their licensing. In order to stablize that market you would need to develop a common ground among those parties, so that a market could exist and everybody would be playing with the same deck. You don't have that right now, because of the privilege associated with nonmunicipal preference. But if you really want a more competitive electric marketplace, you must deal with the fact that you have many different types of service providers of service the electric side. The gas side is much easier.

One of the questions which is often raised about competition in the electric market is that whether we have qualifying facilities like we have cogenerators, exist in a competitive market. It isn't a competitive market. I mean, it really isn't at all. There is no bidding process. There are no buyers and sellers. Theirs is a guaranteed market position intended to offset the monopoly position of the utility. A third party, the government, says, "You shall buy power, these are the

rules by which you will buy it, and the QFs can provide that power or not, if they choose." It is not a real market. In essence, it is simply a structured capital mechanism or something like that. If you really wanted a competitive market in electric power, you would have to create an open bidding system.

Utility regulators are in a very peculiar situation on the electric side, because they have two constituencies. They have one constituency which is the ratepayers, their traditional constituency. But under the small power producer section of the Public Utilities Code and under PURPA (Public Utilities Reformed Procedures Act), they have another constituency, the QFs. These constituencies are increasingly in conflict. In the early days when you had a shortage situation, where you wanted to create that market, the burden of proof, the balance of doubt, whatever you want to call it, was really in favor of the QFs. That is, if you had a tough shot to call, you would say okay, we will use the standard of ratepayer indifference and we will create a system which encourages other providers of electricity. Now, when you have a potential surplus situation, it may be time to rethink the allocation of that rent and considering making ratepayer interests paramount again. That means coming up with a much more competitive system. That would lead to some other interesting issues: you can't necessarily let the utility conduct the bidding, because the utility is a monopoly. Under PURPA, the utility may have a 50 percent ownership in some of these

entities. Does that mean then that the State has to conduct the bidding? Are we going to have a lottery for electricity in the state of California? The institutional structures are going to have to be rethought in order to allow potential competition to take place. These are the kinds of issues that one confronts in this particular kind of circumstance.

Now, if we are talking about utilities keeping customers and utilities losing customers, one question arises: why do the utilities want to keep customers? Why is it in the public interest for utilities to keep customers? Let's take the gas transportation case. In a situation where you have a fixed transportation system, and virtually no need to add capital, you can say that the more customers and the more sales the better, because you have a bigger base on which to allocate a fixed number of costs. Let's take electricity now. In the case of electricity, in order to open up a market, you probably have to develop a lot of additional facilities. You have to build new transmission lines and distribution lines and whathaveyou. And then, all of sudden, you have a case where you are allocating additional cost to an uncertain number of customers. In this case, it may not be in the interest of the existing customers to have those investments made. Because, instead of a contribution to an existing margin, you may have to make up a bigger margin requirement. Those tradeoffs are going to have to be made by regulators in the interest of those core customers. There are an

awful lot of issues which become considerably simpler when you are talking about a fixed capital stock. It becomes a lot more complicated when you are talking about additional investment and who is going to pick up the risk for it.

In closing, I think there are two conceptual frameworks at which one could look: (1) regulator responsibility and (2) regulatory strategy. Obviously, there are a lot of variations on these themes. But one might keep them in mind in trying to structure an approach. The first I would call a "preservation" strategy. That's basically a case where you say, we are going to have a core group of customers. We are going to protect that group of customers. We are going to have all kinds of balancing accounts and other kinds of mechanisms to make sure that the amount of risk that the utility undergoes in providing that core service is minimized. We are going to really work for these costs. We are going to protect their interests.

CHAIRWOMAN MOORE: How does that differ from what we do now?

DR. BARKOWITZ: We have that right now, but we have it for everybody. The erosion is taking place at the edges, because, though it maybe works fine for the central customers, but what about the utilities sudden interest in marketing? What do you do about that? Should they be marketing? There is risk associated with marketing. Should the existing ratepayers have to pick up the tab for that? Should the profits be shared? The

other approach is to allow the utilities to take some risks in the marketing area. To eliminate some of the balancing accounts, like the supply adjustment mechanism and the electricity adjustment mechanism, turn them loose and say, "Okay, for your marginal customers, you can go out and do that. You can take supply risk associated with that."

CHAIRWOMAN MOORE: How do you do that without endangering the core group? If you allow them to go off and take the risk as they see fit to do ...?

DR. BARKOWITZ: Well, you could take the revenue streams that are associated with certain parts of the markets, with certain kinds of sales, and treat them for ratemaking purposes. You can have balancing account mechanisms that would only apply to certain customer classes, and you could put other sales outside of the customer classes. For example, in the gas transportation area, the Commission has said that for the crude recovery market, the utilities are allowed to keep 25 percent of whatever they make on transportation over and above the 3¢ minimum. It would make for some pretty complicated regualtion, but you could start to segment and apply different ratemaking practices. As part of an evolution of strategy to getting into an open market, if you felt the need to protect the core market, you probably would be talking about differentiating ratemaking mechanisms on a scale never done before.

CHAIRWOMAN MOORE: What's the feasibility of that, Mr. Wyse?

MR. DUNCAN WYSE: I think we need to be careful as to how we define customers and the utility service obligation to customers in a world of greater competition. As Barbara points out, if you have a customer group with a lot of choices and the utility continues to have the responsibility to serve all customers, whether they are there or not, then there is risk for either the utility shareholders or the captive ratepayers. I think it is incumbent upon the Commission to try to develop strategies that recognize competition and protect the core ratepayers who could suffer, due to competitive marketing.

CHAIRWOMAN MOORE: Who have no choice.

MR. WYSE: Frankly, I don't think we have any choice. I think there is enough competition entering all three markets -- gas, electricity, telecommunications -- that we have to pay a lot of attention to those issues.

CHAIRWOMAN MOORE: Are we doing that?

MR. WYSE: Absolutely.

CHAIRWOMAN MOORE: Give me an example.

MR. WYSE: State natural gas, for example. We are right now trying to rethink our whole gas industry structure in light of the fact that industrial customers have a lot more choice. They can switch to oil. They can now buy gas directly from producers. We have to rethink the obligation of the utilities

who go out and find long-term gas contracts for industrial customers who have lots of other choices. For an example, if the utility goes out and procures long-term contracts, and the market drops and those customers leave the utility, somebody's got to pick up the tab on those contracts. We are exploring how to deal with that, right now, as we rework the gas industry. We are trying to restructure rates to reflect that. It is an evolutionary process, but in each industry, we have work going on to try to understand the nature of the competitive threats to the utilities and how to best protect ratepayers.

CHAIRWOMAN MOORE: We have been joined by my counter from the Senate. Let me say "Welcome!" to Senator Herschel Rosenthal.

Are there any questions of this witness? If not, I will thank you.

We are going to change it around. We are going to go from the Changing Nature of Utility Regulation to the Energy side of it. If we can have the Energy panel: Dan Gibson, Steve Reynolds, Roy Rollins, Gary Simon and Jan Hamrin. Let's begin with Steve Reynolds.

MR. STEVE REYNOLDS: I'm Steve Reynolds, vice president of rates for PG&E. I am going to try to concentrate on the electricity side and Dan is here to talk about gas. But just to reiterate some of the concerns that were touched on by both Barbara and Duncan already...

CHAIRWOMAN MOORE: Why don't we start out with a 3 minute presentation and you tell me your the concerns and problems. Then, we can question you as we go along.

MR. REYNOLDS: In the electric area it is a rather traumatic time. Things are very different from the way they used to be, at the time regulation was established, particularly, the notion of the obligation to serve. The way a utility operates under regulation is that it sits back and tries to develop a plan on the expectation that residential customers, commercial customers, industrial and agricultural customers are all their customers. There is a long-term obligation to serve them all. That obligation rests squarely on the shoulders of the regulated utility company, whether it is a municipal utility or an investor-own utility. We are now discovering that a large number of customers have distinct other alternatives to traditional utility services that were never factored in before. Frankly, it creates a big problem for us. In gas and electric, we are very concerned about what we call our core customers, captive residential and commercial customers, who don't have the alternatives that some of the larger customers have. Frankly, we are only now beginning to get a grasp of what potential utility-system bypass can be. We do a forecast. Right now, we forecast utility requirements for all of those customer groups. We are seeing time and time again that those forecasts are probably going to be wrong.

As an example of the problems we have encountered, very similiar to telecommunications, take a big industrial user of electricity, for example a refinery. Some big refineries can have bills in the neighborhood of $100 million-plus per year. If, as a result of present rates, those customers elected to generate themselves, to build their own facility -- which is probably economic to do in light of today's rate structure -- we could potentially lose $26 million. Under present ratemaking mechanisms, that would have to be picked up by other customers. That is of considerable concern to us. That's one example. If that particular alternative proliferates, it gets larger and larger. The whole problem of electric bypass grows.

In terms of QF developments and other concerns, obviously part of the problem is the fact that our cost structures are not necessarily in balance. Part of that is the history of regulation. There is a major change in the regulated business over the last few years. I think there is a lot that can be done. If we knew that we had no obligation to serve industrial customers, we could do a lot to try to reduce our costs. We would plan for something less than serving all customers.

CHAIRWOMAN MOORE: Are you telling me that you rather not serve the industrial customer?

MR. REYNOLDS: No, I'm not saying that. I think there are advantages to utility systems serving industrial customers,

to the extent that they can help lower the rates to residential and commerical customers. That is a very important factor that underlies alot of the "marketing" efforts that are underway right now.

I think it is very important that utility companies have the flexibility to maintain some of these customers on their systems -- to have flexibile rates, so if a customer is ready to leave, you can at least negotiate, try to get something. It is better to have a customer on your system, even though you are getting less revenue from them, than to not have them at all.

CHAIRWOMAN MOORE: I think Mr. Sher has a question for you.

ASSEMBLYMAN SHER: Would you then support a suggestion that Ms. Barkowitz threw out? If a customer opts to go it alone at some point, then the utility should be released from the obligation at any future time to supply electricity?

MR. REYNOLDS: I think that is the quid pro quo for doing it.

ASSEMBLYMAN SHER: So, you would support that?

MR. REYNOLDS: I'm necessarily supporting it, but I think the Commission has got to define and make clear what the utility obligation is.

ASSEMBLYMAN SHER: If that issue was discussed in a hearing by the Commission, what would PG&E's position be on it?

MR. REYNOLDS: I think we would look very carefully at the proposal and try to decide whether it made any sense or not.

ASSEMBLYMAN SHER: You just said a minute ago that it would be very beneficial to PG&E not to have to plan capacity for -- or at least you wouldn't want to, it is costly to provide that capacity, in the system. And if they are going to go off and generate their own power, that you would avoid that by not being required to that. I thought you already made up your mind on that, at least. Isn't that what you said a minute ago?

MR. REYNOLDS: I didn't mean to imply that we made up our minds. I mean, these are the types of issues that need to be considered, right now, and some guidance provided.

ASSEMBLYMAN SHER: If it was possible to do it in the law, would you advocate prohibiting any customer from going it alone and bypassing the system?

MR. REYNOLDS: I don't think we would recommend that it would be prohibited, but we would want the ability to compete with customers...

ASSEMBLYMAN SHER: Compete? You mean you want to be able to offer a lower rate to your core customers in order to keep them on the system? Is that right?

MR. REYNOLDS: We would at least like to have the ability to discount our own rates as long as we are recovering our incremental costs . You can use anything above our incremental cost to help residential and commerical customers.

ASSEMBLYMAN SHER: To use an analogy, it is the split roll for utility consumers, is that right? Different rates for different users?

MR. REYNOLDS: Particularly, inlight of the fact that there is competition out there and we are regulated...

ASSEMBLYMAN SHER: The competition is generated by the customers themselves. Right?

MR. REYNOLDS: In this case.

ASSEMBLYMAN SHER: I'm asking, can you control that by prohibiting the customer, or at least giving the utility the power to say, "Look, if you go on your own, you are at risk, there is no obligation in the future for the utility to provide..."

MR. REYNOLDS: That would be a quid pro quo in which we would be interested. Or, vice versa, if, when one elected to leave, there would be a very healthy standby charge to reflect the fact that the utility system was standing by, ready to serve them if and when they elected to come back.

ASSEMBLYMAN SHER: This puzzles me a little. I have been on this Committee ever since I got elected to the Legislature, and we have had the issue of differential rates for different users presented in a different context. That is, "Industries are disappearing!" Take the ammonia industry. Do you remember that, Madam Chairperson?

CHAIRWOMAN MOORE: Do I ever.

ASSEMBLYMAN SHER: Inevitably, I always voted against them because the utility always came in against the differential rates. I think the California Manufacturers' Association and the Chamber of Commerce were kind of wishy-washy on those issues, but the utilities were firm, I believe, in opposing the Legislature mandating a differential rate to favor the one user. What you are suggesting here is it may be a good idea to differentiate. It's puzzling to me.

MR. REYNOLDS: I think the distinction has to do with the notion that, right now, a number of those customers, a large number, potentially can leave and leave indefinitely, to the harm of the residential and commercial customer groups.

ASSEMBLYMAN SHER: That's what I'm saying: make it costly or risky for them to do it. You are not ready to say whether you will support that.

MR. REYNOLDS: I think we want to look very carefully at some specific proposals along those lines.

CHAIRWOMAN MOORE: Mr. Stirling?

ASSEMBLYMAN STIRLING: I don't think you should make it costly or risky for anybody to exercise their freedom of choice. But it is certainly prudent for you, Mr. Reynolds, to analyze, the impact of what is happening through disintermediation or the threat of disintermediation. It seems to me that your unstated assumption is that you will simply lose customer base rather than take advantage of new freedoms to gain customer base, through

innovative market strategies, innovative services, and that sort of thing. Does your company consider customer gains through freedom?

MR. REYNOLDS: Absolutely.

ASSEMBLYMAN STIRLING: What sort of gains would you see if you were given more freedom in terms of service?

MR. REYNOLDS: One of the things we would need would be the opportunity to sit down with new customers to determine what level of energy cost they would need, in order to either develop a facility within our service territory...

ASSEMBLYMAN STIRLING: Do you have a right to do that now?

MR. REYNOLDS: We do, but we have to provide rates and file tariffs which are fixed.

ASSEMBLYMAN STIRLING: You would want to tailor peak-hour and that sort of thing?

MR. REYNOLDS: We may need to tailor...

ASSEMBLYMAN STIRLING: You don't have that authority now?

MR. REYNOLDS: Right now, our rates probably change at the most, once every six months. As we have seen in the last week, when you have a dramatic drop in the price of oil, you can have some major changes in what's happening with your competition, whether it is gas or alternative fuel. Prices drop, the oil market is there. The same thing happens with regard to electricity.

ASSEMBLYMAN STIRLING: How would you characterize the difference between our mode of regulation and Florida's mode. I understand these are producers and transmitters, and that the transmitters can negotiate day-rates with producers and simply treat the energy as a commodity and have a daily market-size. How is their freedom different from our regulation?

MR. REYNOLDS: The only difference that exist in California is at the electric transmission level. In Florida where there are some pool arrangements which are a little bit different than the pool arrangements here in California. By pool arrangements, I'm talking about the flow of energy within the state. We operate much the same way, but try to import cheap power from one area of the state when it is available to help another area of the state.

ASSEMBLYMAN STIRLING: So, you don't see any real distinction?

MR. REYNOLDS: I don't see any real distinction.

ASSEMBLYMAN STIRLING: Are you presently allowed under law to do the cogeneration plants for runaway customers or provide solar receptors in residential markets to produce electricity, and all those sorts of things? Or are you simply stuck as the great dump truck, hauling power from where the PUC tells you to where it tells you, for a given rate?

MR. REYNOLDS: I'd like to consider ourselves the expected supplier of last resort. If anyone can escape our

services, they try to do it. Let me use as an example the municipal entities which, previously purchased power from us. Because they didn't like our cost of doing business, they have gone off and developed their own resources.

ASSEMBLYMAN STIRLING: Sure. I understand that you are defending your revenue base. I don't think you should defend it though at the expense of fundamental American values which is in effect slavery. "We run a wire into your skull or business and you've got to pay us or we won't give you the juice." It seems to me that you ought to defend your company's future by innovation, reform, change, and the ability to provide the cogen plants to service those -- the verb I invented is called "transmogrifying."

MR. REYNOLDS: That's one of the things that we are hoping to get across. We are willing to do that.

ASSEMBLYMAN STIRLING: I don't hear you talking in those terms. I hear you talking, "Let us defend ourselves. Let us capture these people. Don't let them go away. We are going to be damaged if you don't protect us." I don't see any optimism, any creativity, any dream of the future success. I see you bleakly anticipating failure and dissimulation.

MR. REYNOLDS: If we are not allowed to compete that is the possible outcome. We would like to use the American free-enterprise system, particularly in the areas where competition now flourishes, where it did not in the past, and

possibly be able to compete, primarily in industrial types of services, where those electric and gas customers have some real alterntives.

ASSEMBLYMAN STIRLING: Let me just give you one example that I relate to. When I was on the San Diego City Council we attempted to deregulate the taxi cabs, to turn each of those cab drivers into an entrepreneur. Yellow Cab didn't like that at all. Its owner liked the City Council setting his rates and that sort of thing. Well, over his objection, we did free up the cab industry and let them set their own rates. And Yellow Cab, instead of going broke, actually retrenched and became a cab service agency and it is much more profitable now than it ever was in the past. The cabs are cleaner and neater and cab ridership, I think, doubled in the first year in San Diego. I would much rather you got the "Yellow Cab syndrome," initiated action and went into the aggressive, "we can serve" and "we shall overcome" mode. Thank you, Madam Chairwoman.

CHAIRWOMAN MOORE: Is that a speech for deregulation? Why don't we move to the other half of the PG&E shelf and have the gas side of the house?

MR. DAN GIBSON: There's no doubt there are a lot of profound changes taking place in our industry, expecially in the gas side of the business. We are already facing and dealing quite successfully with the kind of competition that the previous Assembly member was referring to. It is an exciting time in our

market. There are a lot of things changing. I can assure you that we aren't complacent. I think our record during the last year or two speaks for itself. We are actually out there leading the charge.

From PG&E's point of view, though, there is something that is going to remain through this change and turmoil and that is this: our primary mission and our corporate commitment is and will continue to be to provide high quality, reliable, and affordable utility service to all of our residential and commercial business customers.

Other classes of customers have an increasing aray of choices. Alternative fuels, such as oil and coal and even natural gas, which we are willing and ready to transport over our own system to them. Self-generation on the electric side. Those customers are generally our largest industrial customers, who are availing themselves of those choices in increasing numbers. For those customers, we have to take a hard look.

CHAIRWOMAN MOORE: Back up a little bit. Have you had any takers for your whelling ervice?

MR. GIBSON: We have a number of people who are asking about it and who are interested. Until the Commission finally comes out with the final order on it, I can't tell you whether we are going to have them or not, because of the fact we don't have a final specific thing to offer as yet. But, I think, yes, there will be some. Certainly, in the enhanced oil recovery area, I believe there will be a number.

CHAIRWOMAN MOORE: Do you have any idea when that number is going to come out of the PUC?

MR. GIBSON: I would think...

CHAIRWOMAN MOORE: We have someone who will give us the facts. I just thought you might have a guess.

MR. WYSE: We are going into workshops. The text has been filed and there are 30 days for comments. We are going into workshops. Soon thereafte, assuming we can straighten out all the details, we will put them in effect this spring.

CHAIRWOMAN MOORE: Could you give me any idea what the tariff looks like? Is it the actual cost of the wheeling or is there the kind of flexibility that, Dan feels he needs in order to attract those customers he is trying to get?

MR. WYSE: For the EOR market, there is flexibility built into the order, to compete for that market in particular. The tariff will be a complete package available to all customers who move gas in California.

ASSEMBLYMAN SHER: Just on the EOR point, that is a good illustration. Maybe what Mr. Stirling was talking about, you went before the PUC and supported an order to permit the wheeling of other people's gas, that they purchased elsewhere, over two of your pipelines, right?

CHAIRWOMAN MOORE: I am sure Southern California Gas will have some comments along those lines.

ASSEMBLYMAN SHER: From what I read in the papers, there are some owner provisions put in it, in terms of how long-term those contracts have to be. We had a hearing on EOR. Some of you may remember. Those who want to build the private pipeline, which Assemblyman Stirling would applaud in the great tradition of nonslavery, would have is a big incentive not to build those pipelines, to tie up this oil companies, if they want in the short-term to avail themselves of your pipelines. You supported that, didn't you?

MR. GIBSON: Actually, Assemblyman Sher, the EOR transport order that has come out from the Commission offers a tremendous amount of freedom to the prospective shipper. It is designed specifically to be directly competitive with the kind of service that the shipper could get from a brand new pipeline.

ASSEMBLYMAN SHER: And there is no disincentive for them, in the long-term, of working with the private pipeline to have their gas wheeled from Arizona or from someplace through this private pipeline? There's no disincentive built into this order? I understood that there was.

MR. GIBSON: You will hear a number of stories from those who are proponents of pipelines. All I can tell you, from the point of view of the service that Southern Cal Gas and PG&E are allowed to offer these customers, is that we have an existing pipeline system which is largely depreciated and therefore cheaper. We can offer cheaper services. We can offer them on a long-term basis.

ASSEMBLYMAN SHER: There were no conditions in there about how long the contracts have to be?

MR. GIBSON: Yes, there are.

ASSEMBLYMAN SHER: They are in there. Why do they have to be in there?

MR. GIBSON: The fact is, we are offering a service which is directly competitive with the out-of-state pipeline.

ASSEMBLYMAN SHER: Not directly competitive, because there aren't any out-of-state pipelines. The question is will they be built?

MR. GIBSON: If and when they are proposed, they are going to have to propose them on the basis of tying up the customer for a certain period of time, probably a longer period of time than we need to in order to assure that they pay off their brand-new and very expensive pipelines. The fact of the matter is, we can provide that service, provide it more cheaply, provide it in the true spirit of competition at a better rate and terms that are just as good as what we offer to the out-of-stater's.

Now, you are suggesting to me we ought to be passive into offer our transport capacity on a short-term basis, so that we can simply allow and create...

ASSEMBLYMAN SHER: I don't suggest that. I was just following Assemblyman Stirling's line of questioning. He said creativity is much better than slavery. I was suggesting instead

of creativity, trying to compete on a cost and service basis. You go to the PUC and you get an order that somehow is disadvantageous to the oil companies in their desire to go with these private pipelines.

MR. GIBSON: It is just as good as what they can get from the private pipelines. Better, in fact.

ASSEMBLYMAN SHER: Do the oil companies think that? Do they oppose the order?

MR. GIBSON: I think they will think that when they start signing up. As a matter of fact, a couple of them already have, with Southern Cal Gas.

ASSEMBLYMAN SHER: Did they appear in these proceedings? These oil companies?

MR. GIBSON: Yes, they were.

ASSEMBLYMAN SHER: And, they were totally in support of the order that was requested?

MR. GIBSON: They would have liked a lot more freedom, of course.

ASSEMBLYMAN SHER: That's what I was talking about, "freedom." It is a question of "freedom."

MR. GIBSON: Everybody wants the best deal they can possibly get, but there is no reason for us to give a better deal and give away the birthright of our customers...

CHAIRWOMAN MOORE: Mr. Sher, you hit on it. You see, they like it.

ASSEMBLYMAN SHER: That's why Stirling doesn't.

CHAIRWOMAN MOORE: Right. That's exactly the point. You jumped to the end of my point. I just wonder how well Southern California Gas is doing? Isn't this a new twist. Do you get to come into their service area? Is that a partnership that you now have?

MR. ROY RAWLINGS: Well, let me see if I can clarify a number of things that came up so far. With respect to transportation, there is a transportation order in effect. There are file tariffs in effect. Our company is offering transportation for those who qualify for it. The PUC has set forth, in approximately 30 days (and I don't think they have scheduled the workshops yet) workshops to review comments parties may have. To the extent we have signed up customers or something comes out of the workshop that the customer would like -- it doesn't have in our contract -- it may get them after that workshop. But we are in the business of offering transportation. In fact, we have one customer, Texaco, who has signed up for transportation under a contract. That contract we negotiated with them approximately nine months ago, and it had the format as well as the major conditions upon which the PUC based its transportation order. We have been pushing transportation for the last two years.

CHAIRWOMAN MOORE: Yes, I know. There have been some questions about your price and the cost. But, let me go back. I

am trying to understand if Dan Gibson is going to get to wheel it out, isn't that Southern California's territory that we are talking about, roughly?

MR. RAWLINGS: Which respect, the EOR?

CHAIRWOMAN MOORE: The EOR.

MR. RAWLINGS: There are two separate issues. One is simply the transportation issue.

CHAIRWOMAN MOORE: We've got that. I am more interested in the franchise issue.

MR. RAWLINGS: The second issue is the service territory issue related to the enhanced oil recovery market. As you know, the CPUC did issue a decision approximately a week and a half ago on that question. Does that answer your question?

CHAIRWOMAN MOORE: I see Duncan on the edge of his chair. He is getting ready to explain that to me.

MR. WYSE: I was going to answer another question actually. There is an issue of territorial dispute.

CHAIRWOMAN MOORE: But it hasn't been resolved.

MR. WYSE: No, it was resolved a week and half ago.

CHAIRWOMAN MOORE: What is the resolution, tell me.

MR. WYSE: It divides the market. Some was given to So Cal, 40 percent to PG&E. It basically was a division order.

CHAIRWOMAN MOORE: But wasn't it initially Southern California Gas's territory?

MR. WYSE: Initially, about 80 percent was Southern California Gas. It was a territorial dispute, the Commission heard both sides...

CHAIRWOMAN MOORE: I live in Southern California and my rates are impacted by Southern California giving away the store. If they had 80 percent and now they have 60 percent, I don't like that at all.

ASSEMBLYMAN SHER: They didn't give away the store, they got rid of the competition.

CHAIRWOMAN MOORE: The pipeline was the major one. PG&E was the one that was standing alone on that.

MR. GIBSON: I prefer to look at it this way. There had to be a way of ensuring that the two California utilities could make maximal use of their existing facilities to be able to serve that market down there at the least possible cost. We have existing capacity which was greater than the market which was indicated to be in our service territory. Southern Cal Gas, it appeared on the record, had market available to it which was greater than its capacity to serve using only its own facilities. So, there had to be some sort of compromise to ensure that the benefits of serving that market.

CHAIRWOMAN MOORE: So, you literally had them over the barrel?

MR. GIBSON: If we wanted to serve that market and get maximal benefits for all California customers, there had to be

cooperation. This, I think, is the basis for the cooperation. I believe we will be able to go forward now on that basis. I am very, very hopeful. Our two companies have been negotiating.

CHAIRWOMAN MOORE: So, it was a conspiracy between the two of you?

MR. GIBSON: It is an agreement under the auspices of the Public Utilities Commission, to assure that this market is served.

CHAIRWOMAN MOORE: And you are going to include the PUC in the conspiracy, with their approval. (Laughter)

MR. GIBSON: To assure, Madam Chair, that the facilities of the two utilities are not going to be idled. That would not be a benefit to anyone. It would not be of benefit to the enhanced oil recovery customers, who would have to build brand-new, very expensive facilities.

CHAIRWOMAN MOORE: Now, on the new market. Let's take this a bit further. How much new business are you going to get from recovery market? How much of that is going to go back into the rate base?

MR. GIBSON: Every bit of the ...

CHAIRWOMAN MOORE: Is this going to be part of your regular service or is this going to be a diversified-kind of activity?

MR. GIBSON: This is using our existing facilities. Therefore, every bit of revenue that we recover up through the

total 3¢ per therm will go as a credit to reduce other customers bills. To the extent that Southern Cal Gas or ourselves through the use of our entrepreneural skills, are able to obtain a higher rate from these customers than the 3¢ floor, we would be entitled to retain 25 percent of that additional amount for the benefit of our shareholders. The other 75 percent would go to the benefit of our other customers. This is a very, very strong incentive for the utilities to capture that market for the benefit of our customers, who will enjoy the lion's share of those benefits.

CHAIRWOMAN MOORE: But if you are using your current facilities, which have been built and paid for by the ratepayers, then how do you justify giving 25 percent to the shareholders?

MR. GIBSON: If we were unable to fill those facilities, nevertheless would be there and would still have to be borne by the remaining customers. That is the great the problem faced by utilities these days, as they face greater competition. We're not afraid of the competition, but we want to assure that we have the freedom to go out and meet that competition, work in that competitive market, have the flexibility to meet that competition. If we do, we want to assure that that benefit goes back to our core customers. That's what this is all about. That's why we are doing it.

CHAIRWOMAN MOORE: But only 75 percent.

MR. GIBSON: No, we are talking about only the 25% of that incremental amount on top of the floor rate. Floor rate is

3¢ per therm. If we manage to get 3.1¢ per therm, then 25% of that one-tenth goes to the shareholders.

CHAIRWOMAN MOORE: Why? I'm just trying to understand why the shareholder gets any. Why isn't it all put back into the rate base?

MR. RAWLINGS: Let me give you Southern Cal Gas's perspective. We don't know why it was put in there. It wasn't a recommendation on our part.

CHAIRWOMAN MOORE: You wanted to give back 100 percent?

MR. RAWLINGS: No. We viewed it as a utility service, period. Our rate of return is based on our invested capital. I think Mr. Wyse can tell you why the PUC put it in there. We haven't gotten the 25% yet.

MR. WYSE: Let me explain. We had trouble. We were facing a marketing problem, setting the rate for the EOR's. We set the three cents level, recognizing it could potentially go higher. We wanted to give a good strong incentive for the utility to negotiate with the customer and to get as much as it could. The Commission felt that this was the way to give the incentive, to get as much contribution as possible, while, of course, actually attracting the customer. That was the theory, to give incentives for the utilities to perform.

CHAIRWOMAN MOORE: So, it is a bonus?

MR. WYSE: A bonus. I think that is going to be a theme across utility regulation in the future: given the kind of

marketing challenges that we have and the fact that the utilities are closest to the customers, as much as possible we have to build in incentives and penalties in both directions.

CHAIRWOMAN MOORE: So, you are going to be giving a lot of bonuses in the future. Is that correct?

MR. WYSE: Well, it could go either direction. There are a number of proposals the other way.

MR. RAWLINGS: I just might add, it has always gone the other direction.

CHAIRWOMAN MOORE: That's interesting. Mr. Rawlings you can add to what Mr. Gibson said.

MR. RAWLINGS: Fine, I will be brief. Dan has hit on a number of items. I represent the Southern California Gas Company.

We are a gas-only utility. We don't have both sides of the bases covered.

CHAIRWOMAN MOORE: Excuse me. Mr. Sher, you missed it. Duncan Wyse clarified the PUC's role. What they are doing is giving a bonus.

ASSEMBLYMAN SHER: The 25 percent bonus. For skillful contracting?

CHAIRWOMAN MOORE: That's it.

MR. RAWLINGS: In any event, our challenges are a little bit different, in some respects, from a combined gas and electric organization's. In a period of rapidly changing market and

competitive environment, the key challenge we have, number one, is how do we keep our existing customers? Half of the volume of gas we sell is sold to customers who have the capability of turning to an alternative fuel, like oil, propane, or diesel fuel. I am sure all of you have read in the newspapers these days that the bottom has literally dropped out of the oil markets. There are a lot of benefits as a result of that, I might point out. Ultimately, all of the consumers will benefit in the long run. But our immediate problem as a utility is that we are unable to provide service, competitively, to our large customers. To the extent that they are covering the cost of running our operation, we may forego that. Inevitably, the rates to other customers will have to go up to cover those costs. That is a real challenge we are facing.

CHAIRWOMAN MOORE: That's has always been a challenge. It is something we have always heard. We always hear the threat of those who have the alternative, the ability to fuel switch. Have you had any large customers switch? What proportion, if any, have actually left?

MR. RAWLINGS: I might point out this oil decline has been very rapid. During the last fifteen to twenty days, you have seen dramatic drops. As of today the San Diego Gas and Electric Company no longer buys gas from us to serve its electric-power boilers.

CHAIRWOMAN MOORE: San Diego Gas's lobbyist just went out the back door, too.

MR. RAWLINGS: He must have heard. In terms of volume, they are a large customer.

CHAIRWOMAN MOORE: How long ago was this when they dropped off?

MR. RAWLINGS: Today. They dropped off the system and are now burning oil they have been able to purchase at a very, very attractive price. We are unable to compete at this point.

CHAIRWOMAN MOORE: Dan or Steve, have you had a large one go?

MR. GIBSON: From 1978 through 1984, we lost over 25 percent of our industrial gas use, largely to alternative fuel -- to coal, to oil or ...

CHAIRWOMAN MOORE: The impact wouldn't be as great on you, Southern California Gas, because if they drop off, they still have to use your gas for cogeneration?

MR. GIBSON: No, not necessarily. We lose customers the same way Southern California Gas does. In the last year, as a result of these flexible rates, we redeemed a portion of our customers through marketing and some fairly aggressive efforts to reacquire those customers for the benefit of our residential and small commercial customers. It has been very helpful. But the problem, as Roy indicated, is getting greater, because oil prices are dropping and the doors of these industrial gas users are open

to somebody trying to sell oil, coal or an alternative gas service.

CHAIRWOMAN MOORE: Mr. Sher?

ASSEMBLYMAN SHER: You said one of the customers you lost was the San Diego utility?

MR. RAWLINGS: Yes, the San Diego Gas and Electric Company. We supply all of the gas for San Diego Gas & Electric. It is our largest wholesale customer.

ASSEMBLYMAN SHER: That's a customer whose constituency is other ratepayers. This is a fuel cost to them, right? So the savings will be realized by their customers. Is that right?

MR. RAWLINGS: Certainly, from San Diego's perspective the reason they switched is because they felt they could purchase oil at a more attractive price, and natural gas, for the benefit of the ratepayers. From our perspective, of course, the problem is just the opposite.

ASSEMBLYMAN SHER: I think there is a distinction between the utility as a customer, where the ratepayers of that utility will be the beneficiaries; and a private concern as a customer, where the competition is between their savings and the rest of the customers on your system. I want to go back to the EOR thing. Do I remember correctly that Southern California Gas was a partner in one of the companies that wanted to build...

CHAIRWOMAN MOORE: Pacific Lighting Company.

ASSEMBLYMAN SHER: Was it your parent company?

MR. RAWLINGS: Southern California Gas Company, the utility, is involved in doing everything we can to provide utility service to that market in lieu of any kind of interstate pipeline coming into the state. The parent of the Southern California Gas Company, Pacific Lighting Corporation, is in partnership with the two traditional gas suppliers of the state: El Paso Natural Gas Company and Transwestern Gas Company which is subsidiary of now Houston Natural Gas Company. They have proposed a pipeline. They would build that pipeline only under the unusual circumstance that the Southern California Gas Company or the utilities in the State of California are unsuccessful in selling or transporting gas to the EOR market.

ASSEMBLYMAN SHER: I remember the hearing we had. The entrepreneurs who wanted to build this private pipeline -- how should I put it -- "displayed" the utility in California as one of the partners. Now, we are led to understand, the subsidiary -- that's you, right? -- fully supports the PUC order, which has the potential to make it difficult if not impossible, for these oil companies to go ahead with these private pipeline.

MR. RAWLINGS: The PUC order stepped up to the competitive challenge, granting better competitive terms for us than the oil companies could get if they went to an independent pipeline. That is why we pushed transportation so hard.

ASSEMBLYMAN SHER: I remember them saying, when that they were here, they were worried about the guaranteed supply,

relying on the utilities. They wanted to buy their own fuel. You say they still get that, because you will just wheel it for them.

MR. RAWLINGS: We will transport it through our available pipeline system to the EOR market.

ASSEMBLYMAN SHER: Have the oil companies stopped talking to the private pipelines now?

CHAIRWOMAN MOORE: You can ask Mr. Simon in a minute.

MR. RAWLINGS: Yes. You can talk to Jerry about it. I think the oil companies will continue to seek the very best deal they can get until they must reach a final decision. I want to point out, we have two of the major oil companies for whom we are now moving gas. For Texaco, we are moving a large volume of gas under a five-year arrangement, 50 percent take or pay, which means they are required to pay for 50 percent of the transportation whether they use it or not. We also have a large agreement with the Shell Oil Company to move what we call "exchange gas" for them.

ASSEMBLYMAN SHER: Would it not be possible for Texaco, for example, even if they are tied up with you for five years, to enter into an arrangement on a long-term contract beyond the five years with one of these private companies, in order to make it possible for that pipeline to be built?

MR. RAWLINGS: I guess if they wanted to, they could do that. Our objective is to try to provide contractual services for them beyond the five years.

ASSEMBLYMAN SHER: That's the thing I don't understand. I heard all of this screaming about this PUC order, and I just wondered whether it has made -- are we going to hear from the private pipelines? Okay, I'll stop and wait.

MR. WYSE: To go back to the question of long-term contracts: that is, of course, of benefit to the oil companies. They wanted the long-term price security.

CHAIRWOMAN MOORE: You gave them five years?

MR. RAWLINGS: Right.

MR. WYSE: They wanted that kind of security, because they are afraid that the price might rise on them next year.

CHAIRWOMAN MOORE: The PUC order, though, was five years?

MR. WYSE: Five years.

MR. RAWLINGS: Or greater. A five year minimum.

MR. GIBSON: From the point of view of PG&E, yes, it is possible that these customers might go over to the interstate pipeline. We are going to do everything we can, in terms of offering them an attractive rate and attractive terms and conditions of service, to encourage them not to. Assemblyman Sher, that is the only way we can do that.

ASSEMBLYMAN SHER: In order to have true competition we have to get the pipeline built or make it a viable alternative. What I have heard is that there is something in this PUC order that was calculated to make it difficult, if not impossible, for

the oil companies to get the short-term supply of their own gas through the regulated utilities, but still have an open option to contract with the private pipeline for the time beyond which it be built.

MR. GIBSON: We would like to offer them long-term service which is attractive, which is going to make for a long-term relationship. If you will beg my pardon, I really don't see any reason why we should put up with the one night stand.

CHAIRWOMAN MOORE: Oh?

ASSEMBLYMAN SHER: That's the case you took to the PUC and they agreed with you. Right?

MR. GIBSON: Yes, sir.

ASSEMBLYMAN SHER: Okay. I want to hear from the...

CHAIRWOMAN MOORE: Let's go to Mr. Simon. You still have your deal with Pacific Lighting, not with Southern California Gas. We are clear on that. You do have Pacific Lighting as a partner in the Houston Company with you. Is that correct?

MR. GARY SIMON: Yes. We are still pursuing the Mohave Pipeline project.

CHAIRWOMAN MOORE: With the pipeline that you now have in California, are you able to pursue the oil market?

MR. SIMON: Yes. Let me give you a little background.

CHAIRWOMAN MOORE: We have a little competition, Mr. Sher.

MR. SIMON: First of all, as has been described by Mr. Rawlings, the relationship between Southern California Gas and San Diego Gas and Electric, has a utility on each side of it. There is a customer-supplier relationship going both ways. That analogy also applies to El Paso, which is the supplier to two big customers in the state, PG&E and So Cal Gas. El Paso has exactly the same concern that you have about the utilities going to into competition and providing new services, coming on and off the system. You know from our testimony before that we've got a big stake here. We get 80 percent of our revenues from sales to this state. Conversely, this state gets more than half of its gas over the El Paso system. So, we are linked together whether we like it or not. Certainly, it has been a good relationship over time, and we would like it to continue.

At the federal level, where we are regulated, the decision essentially has been made. There is no waffling now in terms of competition and deregulation. By orders of the Federal Energy Regulatory Commission (FERC), the federal government has virtually taken away the obligation of a company like So Cal or PG&E to take gas from a pipeline like El Paso, but left us with an obligation to serve. So, we have a bad problem of asymmetry. Essentially, FERC has to opened up system competition by allowing interstate to provide transportation to virtually all comers. El

Paso took a big step on January 17, when it voluntarily elected under that program to become an open-access transporter. That means we will move gas over our system to California for anybody, whether they are a competitor of ours, an affiliate of ours, or anybody. We now have two lines of business: transportation service and gas service. In a sense, we are competing with ourselves. We are competing to get that transportation business. One consequence is a lowering of the amount of system gas that we are selling.

We want to alert you -- and we had discussions with the PUC and our customers -- to the fact that we don't think we can hold on to the gas supply we have now acquired. El Paso has over a 15 year supply of gas dedicated to California. But our customers are saying they want the spot gas. They want the cheaper gas. They want some alternatives. We want the competition. They have been turning back the dedicated long-term, contract supplies in favor of the short term gas. To relate through analogies again, PG&E and So Cal like the one-night stands when they are the beneficiaries of the lower price. We are perfectly willing to solve our own problems. We realize that this spot gas is available at a low price, and that our customers really should be getting it. We will have to do something to slim down the supplies that we have "in the bank." We intend to be investing those supplies with other customers. Potentially in California, if you want it. Maybe EOR producers

want some of that supply, how that it is surplus to our needs. Maybe PG&E and So Cal would like to buy a piece and become the contract holder for the gas and deal with the well-owners on a take-or-pay directly, rather than through El Paso. Whatever it is, we will have to get some balance restored to our system, between the obligations of our customers and our obligations to our producers.

CHAIRWOMAN MOORE: Mr. Sher has a question for you.

ASSEMBLYMAN SHER: Does El Paso currently have a pipeline that goes directly to the oil fields?

MR. SIMON: No, sir. Our pipelines stop literally in the middle of the Colorado River.

ASSEMBLYMAN SHER: If the oil companies wanted to buy gas and get it to their oil fields, what would you have to do to get it there?

MR. SIMON: We would turn it over to So Cal and PG&E for delivery to the oil fields, or we would we, as you call it, the private pipeline.

ASSEMBLYMAN SHER: Do you desire to build a private pipeline to the oil fields?

MR. SIMON: We are currently moving 130 million cubic feet a day for Texaco and Shell, for their EOR operations in Kern County. We have continuous discussions going on with EOR producers to provide them with even more service. That gas for Texaco and Shell is being delivered by So Cal Gas. We have

approached it this way: it is up to the customer, Mr. Sher. You have to remember (and let's get a little perspective on this): when El Paso and its partners proposed the Mohave Pipeline, the PUC staff was opposed to transportation. It didn't want it, believing that it would be bad for the utilities to provide a transportation service. What we saw was a group of customers down there in Kern County who said they desperately wanted service. If the state was going to say they couldn't get it over the utility system...

ASSEMBLYMAN SHER: You turned the PUC around,. is that what you are saying? It's how a good idea?

CHAIRWOMAN MOORE: We don't know what turned the PUC around.

MR. SIMON: They can answer for themselves.

ASSEMBLYMAN SHER: You don't have any problem with this recent PUC order?

MR. SIMON: No, it is fine if it works. The ultimate question you have to ask is, is this what the customer wants?

ASSEMBLYMAN SHER: There were a couple of others, Canadian, Consortium, and "Kern something?"

MR. SIMON: Kern River Gas Transmission, and El Dorado...

ASSEMBLYMAN SHER: I know you want to speak for them. Do you think they are in the same position? They don't have a problem with the PUC order?

MR. SIMON: They don't get any business unless they build their pipeline.

ASSEMBLYMAN SHER: You've got a pipeline. So, we've got the wrong pipeline here.

CHAIRWOMAN MOORE: They don't have a pipeline in the State of California.

ASSEMBLYMAN SHER: You may speculate that they are probably not happy with the PUC order. I happen to know at least one that let me know there was a violation of the California Environmental Quality Act.

MR. SIMON: We responded to that.

CHAIRWOMAN MOORE: But, El Paso would in the same boat. They would have to build as well.

ASSEMBLYMAN SHER: They currently deliver it to the systems.

CHAIRWOMAN MOORE: Through their own pipeline.

ASSEMBLYMAN SHER: Their own pipeline to the Southern California Gas and PG&E's...

CHAIRWOMAN MOORE: Pipelines.

ASSEMBLYMAN SHER: Yes, and then they go to the oil fields.

CHAIRWOMAN MOORE: Right.

ASSEMBLYMAN SHER: They can work it out, I think.

MR. SIMON: If you like telephone bypass, you are going to love these new interstate pipelines.

ASSEMBLYMAN SHER: I'm not a big fan of them, particularly. I just want to find out what's going on with the PUC order.

MR. SIMON: That's what it is all about.

CHAIRWOMAN MOORE: I guess it isn't feasible for you to consider the pipeline any longer if the utilities are going to be able to make that delivery.

MR. SIMON: There is one consideration and one consideration only, as to whether the partners in Mohave will build that project: are there oil producers out there willing to sign a through-put commitment guaranteeing repayment of the cost of that pipeline? If there are not, we aren't going to build it, and probably none will be built. So, it is up to the customers. If they are satisfied with the service that they are receiving...

CHAIRWOMAN MOORE: We are talking about millions of dollars to build that pipeline, aren't we?

MR. SIMON: Three hundred million, give or take.

ASSEMBLYMAN SHER: I want to know what is in this PUC order that makes it harder for the oil companies to sign that kind of a contract.

MR. SIMON: They are basically concerned that the minimum five year term takes away some of their flexibility.

ASSEMBLYMAN SHER: That's what I thought. That means that these other two competitors of yours don't like this order at all, because it is going to make it very hard for the oil

companies to sign the kind of long term contracts with them if they go along with this minimum five years.

MR. SIMON: Let's follow that thought. Everybody is publishing a schedule for these interstate pipeline. The private pipelines, that say, can be in operation somewhere around 1988 or 1989. If we signed a five-year deal today with our customers, we couldn't jump to an interstate until 1991.

ASSEMBLYMAN SHER: So, you have to get all of that capital together and tie it up, but you won't start recovering on it until after this five-year period.

MR. SIMON: Well, what is the reality of us getting a pipeline in operation by 1988 and 1989 we haven't even started the FERC hearings yet? It going to take at least a year of construction for El Dorado and Mohave, much more than that for Kern River since it a very extensive system going all the way back into Wyoming, on a brand new route. I think the reality is that we don't have the option of jumping to a private pipeline before 1991. I don't know if that is a real possibility anyway, given the pace of FERC procedures.

ASSEMBLYMAN SHER: I'm not an advocate in this, and I represent a lot of people who, are customers of PG&E -- but not all. I'd like to have PG&E negotiate with Palo Alto, because it is off the system now. Unless you can give us a differential rate, as compared to other cities, to bring them back on the system, I don't think that's going to happen.

MR. SIMON: Palo Alto has one of the lowest gas rates on the PG&E system.

ASSEMBLYMAN SHER: Well, not without a lot of litigation. PG&E never wanted to treat us as a wholesale customer. But, that is a different story. Coming back to this, I am just trying to get at the truth of the matter. The whole point of this PUC order, or at least a good part of it including the five-year minimum requirement, was designed to make it very difficult for Kern River and the Canadians to compete. Yet you say you welcome the competition. Is that wrong, El Paso?

MR. SIMON: Well, the five-year term is right in that range where there might be a little bit of discomfort on the producers' part about signing up with the interstate service. I don't think they are completely incompatible. It really depends on the producer that you're talking about. Obviously, Texaco an Shell are comfortable signing up with So Cal Gas and they are still holding open the option of receiving service from an interstate pipeline at some point in the future.

CHAIRWOMAN MOORE: Mr. Sher, you put Mr. Simon on the spot. He told you that PG&E and So Cal are his two biggest customers. He told you that. Maybe we ought to ask Mr. Wyse.

MR. WYSE: I think the Commission is very explicit in its decision. It believes that the best way to serve the EOR's is through the existing distribution systems, because their contribution, about $100 million, will go to other ratepayers.

ASSEMBLYMAN SHER: I know you can't speak for the commissioners. Give me your opinion: what underlies this order, to ensure that the EOR customers would take their gas through PG&E?

MR. WYSE: I think the Commission's decision indicates that the marketing challenge for the Commission and the utility is to serve that market, because it is in the interest of all ratepayers to do so.

ASSEMBLYMAN SHER: That, of course, goes against the competition. The PUC's still protecting its traditional constituents, the ratepayers, in the best way it sees fit.

MR. WYSE: As well as to get service to the EOR market.

ASSEMBLYMAN SHER: Some would argue that ultimately the oil companies would have done better with the private pipelines than they have with the regulated utilities.

CHAIRWOMAN MOORE: Dan, I am not going to give you a chance. Jan is getting tired of sitting here. Come on, Jan, you're on.

MS. JAN HAMRIN: I sometimes use as an analogy the electric utility industry as an old couple that has not gotten along for years and years, to the extent they've forgotten why they ever got together. But they have so much community property they can't find any way to split.

CHAIRWOMAN MOORE: That's as good an analogy as I've heard.

MS. HAMRIN: One partner is the government; the other is the electric utility industry. Both work with other potential partners. The independent producers are one of those. We got our one night stands. Sometimes a one-night stand looks good for awhile. But, then, later the two decide to stay together anyway and put up with all the trouble because of community property and the infrastructure they have to deal with. It is in no way a simple process or a simple issue.

It is nice to banter around the word "competition." However, in the electric utility industry, we have an industry that enjoys both a monopsony and a monopoly position. I believe this is the only industry that enjoys both at the same time. It is very difficult to talk about competition when you have only one buyer for your product. You don't have a lot of places you can go when that buyer also has control over the numbers and other things that can go into calculating how that purchase price is determined. It becomes a difficult thing to work out.

I have one remark I'd like to make and then open it to questions. The greatest advantage that came out of this whole area of qualifying facility development, which I think has anticipated, is actual regulatory competiton. For the first time in a long time, there are at least three players in every proceeding before the Public Utilities Commission. There is, of course, the PUC and the utility. But now there is someone else as well. The indepedent energy producers are in on almost every

case involving rates at the PUC, looking at numbers, questioning things. I think it has raised the level of debate. You cannot be sloppy with your numbers and your facts and figures. Somebody is going through every item, page by page.

CHAIRWOMAN MOORE: Does that make Steve Reynolds happy?

MS. HAMRIN: I don't think that makes Steve happy. It makes him honest.

MR. REYNOLDS: We were always honest. Those hearings days are really long.

MS. HAMRIN: I am not always in on all the cases that Steve's in. We miss the nuclear cases at the moment. I believe there is some real benefit in getting a tighter look at what is going on and what the ratepayers are paying. On the issue of bypass, let me say two things. One, is a symptom of a problem. When you can build an electric generation facility for, in some cases, half the cost of purchasing electricity from the utility, there is a real problem with rates, structure, and how that came to be. Similarly, bypass is much more severe if you are looking at a static system. In the electric utility area, none of the utilities are static. They are growing rapidly and, for the most part, we have not seen bypass equal their increased growth and the demand for electricity. I think I will end with that and take questions.

CHAIRWOMAN MOORE: Any questions? Mr. Sher? All right, with that, we are going to bring up the telephone panel. I am

going to let each of you get one parting shot. Anybody want to make a comment?

No comment? All right. We will let you go on that. Duncan, don't you go away.

We are going to the "Changing Nature of Utility Regulations of the Telecommunication area. Shall we start with the biggest and work our way down? We will start with AT&T.

MR. JOHN DENNIS: Good morning, Assemblywoman Moore and committee members. I am John Dennis, and I represent AT&T, which is slowly getting smaller. In the conversations I have heard, I thought I sensed a movement toward support of freedom and one that maybe opposes slavery. I simply wanted to say I join in that completely.

We view regulation, in essence, as a surrogate for competition when competition is either inadequate or isn't fair. Regulation is intended, generally speaking, is directed toward public utilities. Public utilities, I believe, are organizations normally indicated by a natural monopoly situation. AT&T is not a monopoly. AT&T does not operate in monopoly market in any part of this business. In all aspects it competes with a number of firms. In the State of California, since the introduction of intrastate competition, there are some 100...

CHAIRWOMAN MOORE: Well, you are not a monopoly. Let's talk about dominance. We recognize that you're not a monopoly. I know you are going to dispute your dominant role. I won't say

85 percent of the market or any of those things, but we know you have a bunch. We will keep that in mind as you tell us you're not a monopoly.

MR. DENNIS: You don't want me to comment on that, I can tell.

CHAIRWOMAN MOORE: You can if you like.

MR. DENNIS: Obviously, I have. In every instance where the subject was brought up, we opposed the position that we are a dominant firm in the interexchange long-distance business. I do not believe that we are. We do, obviously, possess a substantial proportion of that interstate market. But we do not have the ability to control entry or exit to that market, nor do we have the ability, by virtue of our position, to set prices. If we were to price in a monopoly fashion, there are ample competitors out there to take that business from us. They're demonstrating that daily. They are doing it, and they would do it more. I agree, we are currently regulated as a dominant member of that market. The competition is not currently being regulated. I don't believe, frankly, that that inures to the benefit of the consumer in the State of California.

If we were free to compete in the market and to offer the kinds of new and innovative services that we would like to offer, if we could do that without the intervention of our competition, the the local exchange companies, or, even in some instances, the Public Utilities Commission's staff, I believe

that the consumer of the State of California would be better served. He would have some innovative services that we could offer that currently are not available to him.

CHAIRWOMAN MOORE: If you were given total freedom, how much would you increase your market share?

MR. DENNIS: If we were given total freedom how much would we increase our market share? I have no way, Assemblywoman Moore, of speculating on that. Frankly, I doubt we would increase our market share at all. What I suspect would occur that we would increase our market share by virtue of the introduction of new services.

CHAIRWOMAN MOORE: If you wouldn't be increasing your market share, then why would you want the freedom?

MR. DENNIS: By increasing the market, we have the potential of increasing our profits. We have the potential of increasing our efficiencies and providing services that are better and of lower cost to the customer.

CHAIRWOMAN MOORE: So, you just want to help the customer?

MR. DENNIS: We are very, very interested in helping the customer, because without him we don't exist. Without him, we don't make a profit, and that is why we are in business.

CHAIRWOMAN MOORE: It is not money that is the root of all evil? It is not what is driving AT&T?

MR. DENNIS: It is what's driving AT&T, but I don't believe it is the root of all evil.

CHAIRWOMAN MOORE: All right.

MR. DENNIS: Does that satisfy you?

CHAIRWOMAN MOORE: That's fine.

MR. DENNIS: Okay. I believe that competition would promote efficiencies. I believe that full competition would drive prices more nearly to their costs. There are long-term benefits in having real competition, and not regulated competition, in the state. The Commission has taken two actions recently that will be beneficial, in the long-run, for the consumers of this state. First it (1) has introduced a reduction in access charges for the interstate or interexchange long distance carriers within the state. That will allow rates to be lowered for long-distance services. It eliminates some of the subsidies currently borne by the interexchange business. In the long-term, that will protect the rate-paying body by ensuring that the more profitable, larger customers remain on the network.

CHAIRWOMAN MOORE: How many people will stay on the network as a result of the reduced access charges? How many, do you think, are going to stay now because of the shift of costs to the end users?

MR. DENNIS: I think that's really two questions. We conducted some surveys. Currently, some 11 percent of the large users bypass the local networks, bypass the interexchange

networks, the total network, and 22 percent suggest that they plan to bypass the network.

CHAIRWOMAN MOORE: Are you talking total bypass or are you talking about a more limited form?

MR. DENNIS: Any form.

CHAIRWOMAN MOORE: The 22 percent.

MR. DENNIS: That is correct.

CHAIRWOMAN MOORE: I've always been told that one of the problems in trying to control bypass is that you can't determine who's bypassing. You are telling me, though, that people who are bypassing are willing to talk about it in the form of a survey.

MR. DENNIS: They are willing to talk about it in a survey in which they are assured confidentiality. That is correct. I don't believe that you can legislate or regulate against bypass. I don't think it is a practical thing to do.

CHAIRWOMAN MOORE: I know that.

MR. DENNIS: In any event, that movement of costs has recently been undertaken by the California Public Utilities Commission. I think it is positive. I support it. I only suggest that it needs to go further and it needs to go faster.

Secondly, the PUC has introduced an order instituting investigation that will bring about a reexamination of how interLATA providers of long-distance service in the state will be regulated. I hope that will bring about a reexamination of how regulation of interexchange carriers in this state is handled

generally. While we are not proposing or suggesting that there should be complete deregulation, we think there are a number of steps that can be taken to improve the oversight that exists and to allow for more benefits of competition to accrue to the customer. I thank you for the opportunity.

CHAIRWOMAN MOORE: Let me ask you a last question. Is the shift by the PUC of the access-charge costs to the end users enough for AT&T to now guarantee that it won't bypass the local network?

MR. DENNIS: I would say no. That is certainly not the case. But, let me add, AT&T's posture is we do not want to bypass. We have no plans to bypass the local exchange network. We believe they are the most efficient providers of access to the customers within the exchange. We will continue to look to the Commission to remove the subsidies so that bypass does not occur.

CHAIRWOMAN MOORE: You answered it was not enough. That suggests that you have some idea of what is enough to get you to guarantee you will not bypass. How much?

MR. DENNIS: I'm not here to propose that. I wouldn't offer a guarantee that we would not, because I don't think it is the interexchange carrier that is the bypasser. It is going to be the customer who will bypass. The customer will not bypass if the level of charges imposed upon them by the local exchange companies is less that it would cost them to provide local service themselves. I believe the local companies are efficient

enough to do so. They can offer service at a lesser rate. They can do that, continue to make a profit, and make a continued contribution to the maintenance of lower exchange rates. I believe that's possible. That's a part of being the efficient provider of service that I mentioned earlier.

CHAIRWOMAN MOORE: But you still can't tell me how much is enough. Mr. Wyse, can you tell me? The PUC issues such great orders, I know you know.

MR. WYSE: That is the question, of course. That is what we have been struggling with. It is always a judgment call, how fast bypass will occur and at what price we can divert it. The Commission's judgment was to discourage significant bypassing. I think we are going to have to keep studying it, that's all I say. You never have perfect information.

CHAIRWOMAN MOORE: The concern I'm having, the more I hear the big customers are the real driving force and the utilities are just the surrogates. I mean, they don't have anything to say about what's going on.

MR. WYSE: That is a common theme across all industries. The larger customers are the ones who have competitive alternatives.

CHAIRWOMAN MOORE: I think your obligation is a little different than that. We will move along.

MR. DENNIS: May I make one last statement?

CHAIRWOMAN MOORE: Okay.

MR. DENNIS: We do have some studies that demonstrate that customers can provide an alternative to local access, and what the costs are to do that. It depends, obviously, on the geography and the concentration in a given area. But the range is not all that great, probably in the range of 1.5 to 2 cents per minute. That's about where it is.

CHAIRWOMAN MOORE: Recent FCC actions gave you the authority to bypass, for all intents and purposes. You have no intention to do that?

MR. DENNIS: No, we have not.

CHAIRWOMAN MOORE: You just like having that authority. Is that your big stick?

MR. DENNIS: We want access to be provided in the most effective way. We still believe that the most effective way to do it, in the long-term, is through the local exchange companies. There has been an indication that the PUC recognizes that we need to eliminate the subsidies. We are willing to wait and attempt to do it in that fashion.

CHAIRWOMAN MOORE: How much was the PUC persuaded by the argument that if you didn't do certain things, AT&T could go ahead and do it anyway?

MR. WYSE: It was major. Not just AT&T, but all the interexchange carriers plus private bypass. We looked at the whole potential threat.

CHAIRWOMAN MOORE: It's real?

MR. WYSE: It's real to the Commission. I think that was the conclusion of the Commission. That was the basis of the action.

CHAIRWOMAN MOORE: So the FCC action basically provides the stick that is the vital portion?

MR. WYSE: It is the driving force. FCC policy really affects how we regulate in California. There is no question about it.

CHAIRWOMAN MOORE: Well, why don't we continue to move on? We will now go to the local exchange companies.

MR. GLENN SULLIVAN: Madam Chair, my name is Glenn Sullivan. My job at Pacific Bell is to recommend the rate structure for our customers. I have been doing this for an awfully long time. I would like to spend a moment with you on the subject of people and the subject of our history.

Very briefly, on the subject of people, there is some good news and some bad news today. The California Public Utilities Commission today issued an order that designated a change in our service for Lifeline customers.

CHAIRWOMAN MOORE: You know how to get to me, huh?

MR. SULLIVAN: Pardon me? The good news is they have ordered us to expand the allowance to 60 calls per month. Also, the income-level has criterion has been raised to 150% of the federal poverty level, targeted at a family size of 2.3 people. So, that will allow more people to recertify for lifeline.

The bad news, from my viewpoint, is that the company had a proposal on the table that would have provided 130 calls and dropped the allowance rate to 10¢. I think in the long term our proposal might have been more beneficial and would have brought more of the certifiable people into the program. But, anyway, we will work with that in the months ahead. We are still recommending the latter service.

CHAIRWOMAN MOORE: Mr. Wyse know why they did that. We won't ask him to tell us about that right now.

MR. SULLIVAN: To move to my point about history, I was very interested in your opening remarks relative to franchises and certificates of public convenience and necessity. Pacific Bell and its precursors were here before the Railroad Commission. We are serving this state at the convenience of this legislature. We were empowered by the Public Utilities Code before there was a Railroad Commission. So, we don't have a certificate of public convenience and necessity.

That leads me back to a comment about people. Our priorities are quite simple. We don't want any resident customer to fall off the network. We want to serve our entire franchise. We like the business we're in. We want to stay in that business.

CHAIRWOMAN MOORE: You also supported the shifting of the access charges to the end users, those customer you say that you like, and you would like to keep on shifting it to residential customers.

MR. SULLIVAN: That's right. I'd like to comment on what I consider an equilibrium point. In October, the Policy and Planning Division of the Public Utilities staff issued a report which I found to be very enlightening. Certainly most of us can subscribe to a lot of the things that were in there.

One of the things that was postulated was that there is a need for economic cost-based pricing of services that are in the competitive arena. I would suggest that the idea of shifting IEC (interexchange carrier) revenues to the end user has to be limited. It can't go on forever. There is a need to do some of it, however, because the history of California ratemaking...

CHAIRWOMAN MOORE: Do you have some idea of what is enough?

MR. SULLIVAN: Yes. The equilibrium point is that point at which we do not lose any residential customers while reducing the cost of the exchange service, so that the requirement for a subsidy is minimized. I don't know what that number is, but it is not $30 per month. It is not that high. I don't know exactly what it is. But, we have to find way to remove some of the burden from the long-distance carriers and their customers, so they don't go away.

CHAIRWOMAN MOORE: You just heard AT&T say they don't know what will keep them on. I mean, do you trust those guys?

MR. SULLIVAN: What I am saying is that, I have a market to serve. I know that I am deriving a heavy subsidy from

interservice-area toll revenues that go to the support of basic revenue exchange service.

CHAIRWOMAN MOORE: Can you document and show how much it is? Can the PUC tell us how much you're subsidizing those calls?

MR. SULLIVAN: Yes, absolutely. I am entering testimony on Monday and exhibits in the present rate case to describe the level of change that we think is we must achieve. Again, our objective is to keep basic residential telephone service as low as feasible. That's our commitment.

I am asking in this rate design for the typical residence customer, and when I say typical, I mean those people who use less than a 130 calls per month, to pay no more than $9.00.

CHAIRWOMAN MOORE: That represents what kind of change from what they are paying now?

MR. SULLIVAN: They are paying $8.25 now.

CHAIRWOMAN MOORE: So, you are not talking about much of a change. All right, go ahead. I didn't mean to throw you off.

MR. SULLIVAN: That's all right. The background is simple. We have created in California, over the years, a situation in which subsidies derived from long-distance usage (based on the economy of scale and technological improvements in that market). But we didn't reduce the prices to the economic costs. The same situation obtained in the local market, as far as the exchange access is concerned. We never raised the rates

to a level that would cover those costs, though those costs have continued to rise.

CHAIRWOMAN MOORE: Your basic message is that local service rates must be raised at some point. You're not exactly sure just how much, but we have never done what we should in terms of making them come close to the costs of providing the service.

MR. SULLIVAN: That's right. They don't have to equal the today's cost. They have to be increased to a degree. Two things have to happen. We have to increase those rates, but only to a point so that people can still afford local service. We have to work hard to get our local exchange costs down, so that we can reduce the need for that huge subsidy. We are willing to pursue it. It is a dilemma. I also have to add that all around this table are also our customers, and very good customers. Although we may someday find ourselves in competition with some of them, we still serve all of them and we want their best interest to be served as well. The way we handle this is by looking selectively at each market and trying to use rate design and price to handle the problems.

We will need some transitory help. We will need some help in the transition from regulation, until the market structure has leveled out.

CHAIRWOMAN MOORE: Do you want to make a comment on FCC Chairman, Mark Fowler's recent comments on the deregulation of local service?

MR. SULLIVAN: No.

CHAIRWOMAN MOORE: What a great guy. I like this. Mr. Wyse, do you want to make a comment on where the PUC is?

MR. WYSE: I am still trying to understand, to tell you the truth. It is not as clear as it could be. In general terms, we have always taken the position that local exchange and intrastate telecommunications regulation is the jurisdiction of the PUC. Whatever Fowler's views are, the ultimate decision should be made here. We have a case before the U.S. Supreme Court on that issue. We have looked at competition. Of course, you know how we handled it. In the intralata market, restricted competition for the benefit of universal service. One thing is real clear, and it may be misunderstood at the Federal level: we are not going to a world of pervasive competition in local telecommunications, where we can let the free market work. It is not going to happen.

CHAIRWOMAN MOORE: Not on a local level.

MR. WYSE: If that is his vision, I think it is not realistic.

CHAIRWOMAN MOORE: Why don't we go to the unregulated telephone service and then to cable? I don't mean unregulated! Why don't we go to Mr. Peter Howley, who is sometimes called an unregulated telephone company, so to speak.

MR. PETER HOWLEY: My name is Peter Howley. Thank you very much for your invitation. I am particularly pleased because

CENTEX represents the forgotten class of customers, small businesses. We serve over 600 of them.

Large companies, the Fortune 1000 companies, tends to have communications departments which take care of their interests and manage their communications costs. Residential service is an item which is very well recognized as having some problems. I think the Legislature, the Commission, and other parties pretty much represent the residential user. But small businesses, such as those whom CENTEX serves, are frequently left our discussions like this. That is why we are particularly pleased we were invited.

Let me take a second to introduce myself. I have been president and CEO of CENTEX for about six months. Prior to that, I spent eight years running a telephone utility in Arizona. So, I have some familiarity with the problems of both rural and high-growth areas. Prior to that, I was with MCI in its early days for three years, and then eight years with AT&T.

What does CENTEX do? CENTEX acts for small businesses as a communications manager would for a large company, the Fortune 1000-type company. We provide them with a variety of reports and analyses, telemanagement services that are very common for a large company, but relatively unusual for a small company. We provide them with the advantages a large company has.

We also acquire intraLATA facilities from Pacific Bell for our users. We acquire interLATA facilities from whatever IEC

carrier -- AT&T or others -- that is in the best interest of our members. Then we manage that network for the benefit of our users.

We are in the process of developing a large number of value-added services, things that have exotic names like "voice mail," and other things that are very practical, such as call-detail recording.

CENTEX could have provided these services before divestiture. We are not a product of divestiture, though the need for what we are doing has certainly been highlighted because of the changes following divestiture. CENTEX is not a bypass threat to Pacific Bell. We use Pacific's switches and Pacific's facilities, we don't represent a bypass. In fact, in our endeavor to keep our members satisified, we work very hard to keep those users on Pacific's facilities.

Two points why I am here. One, there are approximately 100,000 companies and businesses with 10 to 100 employees. That is the standard size of the customers whom we serve. These people have been forgotten in many respects or not represented because of their size. I hope that you agree that these small businesses should not be preempted from getting the same kinds of services which the Fortune 1000 company would get. That is one point that I wanted to bring to your attention.

The second point, as you know very well: there is a great deal of change in the industry. A lot has taken place in

the last two years. We would suggest, or at least offer for your consideration, the thought that before we have additional change or before we have legislative action, we should let more facts filter in or the dust settle, so that we really have a better idea of where are the problems. Problems today may later turn out not to be problems.

Again, I would like to thank you very much for inviting me.

CHAIRWOMAN MOORE: Thank you for your comments. Let me go back to Mr. Wyse. You've heard this gentleman and his comments regarding small businesses. One of the concerns that he has is creation of a class of service for these people, different from the current classes that exist, the residential and business -- something that would lend itself to small businesses. What's happening with that? Is there any movement within the PUC to take a look at that or what?

MR. WYSE: I don't recall if that a question in the rate design decision.

MR. SULLIVAN: Yes, there is. There are two classes of service under consideration. The first one is under consideration by Commission order, which is the private nonprofit class of service for nonprofit agencies. Our company and others have already submitted reports on that.

Mr. Howley is talking about a class, of service that would apply to companies like Mr. Howley's, that aggregate small

businesses and provide value-added services to them with the same kinds of discounts that we provide to large users. One of the things we're working on right now is a recommendation that would include Mr. Howley's firm and others in a class of service whereby the discounts we would provide them would be based on economic savings. They could aggregate the small customers, pass those savings along, and added their value in management as well as other kinds of service that would be beneficial to those small users. We are working with them. We have every plan to move forward with that in the pendency of the present rate design hearings.

CHAIRWOMAN MOORE: Now, let me ask you one last question, Mr. Howley. You also are a strong advocate of shared tenant services that would actually bypass the local network and hookup directly to AT&T.

MR. HOWLEY: I don't represent the shared tenant services. We are an agent for a group of customers. We don't aggregate traffic at a private PBX where that traffic is a perfect target for bypass. We take that traffic to Bell's Centrex System. By definition, it is captive traffic for Pacific. What we would see as important to the small business user whom we represent is the right to select from the tariffs in the same fashion that a Fortune 1000 company would select, as opposed to having a different class of service.

CHAIRWOMAN MOORE: That might be a little bit more difficult, wouldn't it? Duncan?

MR. WYSE: He's saying that if he could bring together several small business customers to take advantage of the high volume discount, they should be able to take advantage of the discount.

CHAIRWOMAN MOORE: In other words, if in the aggregate you "are" the Fortune 1000, you should be able to have the same thing. Is that it?

MR. HOWLEY: We should be able to pick and choose in the best interest of our members from the tariffs in the same as the large Fortune 500 do.

CHAIRWOMAN MOORE: What precludes you from doing that now?

MR. HOWLEY: Nothing does.

CHAIRWOMAN MOORE: So, you can do that, right?

MR. HOWLEY: Yes, Madam.

CHAIRWOMAN MOORE: We will go to cable, the changing market, and interest in entry into the telecommunications markets. You're on.

MR. MICHAEL MORRIS: Thank you, Madam Chair. Michael Morris, director of regulatory affairs for the California Cable Television Association. I've been asked to focus on how to discern what should be treated as a private service and thus, able to compete freely in the market, and what should be treated as a utility service and regulated as such.

As you are aware, the cable industry has grappledwith the difference between a utility service and some other kinds of service for many, many years. In 1984, our efforts partly culminated in S. 66, which is a federal bill, the Cable Communications Policy Act of 1984. That finally put to rest the question insofar as the provision of television signals. That bill stated that the cable business may not be treated as a public utility business. As we have discussed many times, the cable industry is also interested in and well suited to provide other telecommunication services. Therefore, we remain interested in this question of how to determine the difference betwen a private business and a public utility.

When the issue of regulating a new telecommunications service is discussed, we often lose sight of the purpose for utility regulation.

There are three reasons why public utilities are traditionally regulated. It is important to keep those in mind in looking at any new business and see how they fit with the test. The three tests are the following: (1) a business has natural monopoly characteristics, (2) it provides a consumer necessity, and (3) its customers have no bargaining power.

The first test is whether the business has natural monopoly characteristics. In the distribution of water, power, and local telephone service, there is only going to be one likely provider. There is an absence of competition which will allow

that monopolist to maximize revenues the way a monopolist does, and that's by cutting output and raising prices.

Secondly, we have consumer necessities. I think that is obvious in the case of water, power, and basic telephone service. We agree at this point.

A combination of those two factors leads to the third, when the consumer has no bargaining power. You are dealing with a necessity. Because you only have the natural monopolist, there is really no choice and no ability to negotiate for the product.

Where those factors have been present, utility regulation has generally been appropriate. Through utility regulation the provider emulates what a competitive business would do instead of a natural monopolist.

But, we are talking about a different kind of animal when we talk about new telecommunication services. The kind we would be interested in would be point-to-point and multi-point to multi-point services Those don't exhibit natural monopoly characteristics. There is a multitude of providers, and a multitude of technologies that can be used: cable, fiber, wire, microwave, light waves themselves, and bouncing radio signal off a satellite. Those businesses don't display natural monopoly characteristics.

We're not talking about services which are consumer necessities, and we are not talking about customers that lack bargaining power. There are a lot of providers out there. These

customers know who to go to. They know how to negotiate with those providers. Ultimately, they can always build their own systems. That has a real disciplining effect on the market. No one provider is able to restrict output or price at monopoly levels.

One more trap that we tend to fall into is to say that, because local telephone service is regulated as a public utility, all communication services must be. One example I would like to give is local bus service, which is often regulated as a utility, because it has those characteristics I described. You take another transportation provider like a rental car agency: it's transportation and it competes with buses, but no one would suggest that it is necessary to apply utility regulation to the rental car business. There are lots of competitors. It is not a consumer necessity and there is bargaining power.

CHAIRWOMAN MOORE: I must commend you, Michael, that's clever.

MR. MORRIS: We think the point-to-point business should be seen on its own. Just as rental car agencies are free to compete with regulated utilities, providers of advance telecommunications services should be free also.

CHAIRWOMAN MOORE: Mr. Wyse, do you want to describe how you characterize "new telecommunication services"? I think Mr. Morris defined everything but a new telecommunications service.

MR. WYSE: This is a difficult area for the PUC. We have to define the extent of the local monopoly in telecommunications. Our concern is that the introduction of competition could errode the source of subsidy that exists to support basic rates. We tried to define the line as best we can to assure that new technology can prosper where competition makes sense, without threatening the support that exists today. During the transition period, we hope it continues to exist.

CHAIRWOMAN MOORE: Briefly, private lines? Mr. Morris says private lines are new. They're not a natural monopoly. There is bargaining power there.

MR. WYSE: For high-speed private line service, the Commission is basically entertaining entry applications. Our concern with other private line service is that it is hard to define where a private line ends and local exchange telecommunications begins. It is hard to define the boundaries. It's a struggle. The Commission has drawn the lines as best it can and will continue to look at the issue.

CHAIRWOMAN MOORE: So, you are still struggling?

MR. WYSE: Yes. I think we will for the next decade.

MR. MORRIS: I assure you that anything that the cable industry would do in that area would not cross the boundary of local exchange service. That might be an easy way to draw that kind of line.

CHAIRWOMAN MOORE: We are looking at technology based, as oppose to service-based, definitions. I think that is one of the things that has to be reconciled at some point.

Why don't we hear from our last speaker, Mr. Winn?

MR. MICHAEL WINN: Thank you. My name is Michael Winn. I would like to speak to the issues that have been brought up here rather than the issues that were brought up in the background paper; both are relevant. I believe I have served each of these particular industries in my career with regard to telecommunications, in various ways. I was one of the pioneers in the shared tenant service business and established a building in Los Angeles which was recognized as one of the most sophisticated and comprehensive services available among intelligent buildings in the country at that time. It still is.

I worked as an aggregator. I negotiated an agreement with a CATV provider in Los Angeles for the carrying of signals used for telecommunication purposes on their coax. I spoke as the lead speaker for an AT&T presentation to developers in Los Angeles on, "I Paid Pacific Bell a lot of Money." They were one of the beneficiaries of our aggregation services in Los Angeles.

There are a couple of points that may lead to a new way of looking at the regulatory problem.

CHAIRWOMAN MOORE: Michael, while you are doing all this, what do you do now?

MR. WINN: I am just concluding a book which is to be published in January. It is about implementing technologies so that we develop communities that serve people. I think you will be intensely interested in reading it. All of us here are committed to technology services, profit oriented, and oriented toward the work effort and doing a good job and performing a service. But we forget the purpose for which the service is performed. In the process, we get a service failure of some kind. What I'd like to focus on here is a way of regulating the industry that relates to its technology rather than to its profit centers, that allows competition to exist among profit centers. The state is involved in establishing standards within each technological area.

This relates to what Michael was saying about the nature of point-to-point services as being different from those services which we regard as a natural monopoly. It relates to the fact that telecommunication services off satellites, off fiber optics with huge bandwidth capacity, provide an entirely different environment for entrepreneurism, an entirely different environment for the kinds of services that might be available. At the end of the tunnel is a merged television, computer, and telephone. There will be people out there providing information services of various kinds. The problem is, we don't want to have responsibility of developing all those services in the hands of Pacific Bell. They have a lot of work just to manage their

portion of the business. Also, there are the CATV operators and the aggregators and so forth. How do you create a body of regulation oriented around the technology that allows competition to occur, but also promotes value levels of service and provides protection (in view of the fact that some of the participants in the game have enormous power)? Each one of the regional Bell operating companies have revenues of $7 to $8 billion a year -- the regional guys, as I understand it. It is a huge amount of money. The company I am now working for in Los Angeles is proposing to put a fiber-optic system under a franchise in the City of Los Angeles, down Wilshire Boulevard, to provide point-to-point services explicitly, but also other services such as two-way video, teleconferencing, and things like that.

CHAIRWOMAN MOORE: That would give competition to Michael and competition to local telephone service as well. But, in setting up your senario, you are forgetting that one player also has the responsibility of keeping rates lower and affordable to a group. All of the things that you're talking about are fascinating, the concern we have here is but revenues lost to the services you are now describing. It is Mr. Wyse's job, at least to the people he represents, to maintain that balance.

MR. WYSE: There is a couple of points about that. First, the subsidization that occurred in long distance, if you can call is subsidization, has shifted to shorter distances. So, although the basic monthly rate services are kept low, the actual

calling areas have been changed. The actual phone bills received are up and the subsidization is still there, but it is placed in a different area.

There is another point. I notice that AT&T for instance, has now evolved what they call their "Software Define Network." With the software defined network, you suddenly have bypass available.

CHAIRWOMAN MOORE: But they said they are not going to use it.

MR. WINN: Oh no, but they are using it, now. It is technically not the same thing, because of the way we interpret what we mean by "technology." That's why I said we have to get to a technology standard, in order to establish a basis for regulation. I sense the need to protect entrepreneurs of small firms, who are going to be absolutely essential to providing a hand-holding service for their really important technologies. We have to make that possible. At the same time, we somehow have to manage this defacto monopoly whose own hands have to be held.

CHAIRWOMAN MOORE: What you're saying is that we have to devise away of defining the technology as opposed to defining the service. I think that is a good point and it's well taken. Everyone, if you have one more thing you have to tell us, let's go around and do it. Mr. Dennis?

MR. DENNIS: I would like to comment on the last statement that was made relative to the software defined network

service that we offer. We have a customer -- in fact we have two customers now in California -- who use this service. We have temporary authorization from the California Public Utilities Commission to do that, pending ultimate resolution. In both instances we are using access provided by Pacific Bell. Of the other applicants waiting for the opportunity to sign up for the service when it is approved (and I am thinking positively now), all will also use Pacific Bell.

CHAIRWOMAN MOORE: "Will use Pacific Bell." It will not be bypass?

MR. DENNIS: It will not be bypass.

CHAIRWOMAN MOORE: You hear that, Michael?

MR. MORRIS: I hear it.

CHAIRWOMAN MOORE: Anybody else want to make any parting comments? Pacific Bell?

MR. SULLIVAN: Yes. I would like to clear the record. Pacific Bell operating revenues for 1985 were about $8 billion. Second, I invite the committee's attention to this issue of competition. It goes beyond external competition. Pacific feels that with a relatively level playing field, we are perfectly capable of competing. We have good resources and good management. One of the things that we see happening today, in terms of new technology, is that our prudent management of the introduction of new technology puts us at a disadvantage. The services that we provide are cross-elastic with one another.

When we go out and competitively bid on a fiber optic job for a customer who is also looking at private microwave and a bypass type of facility, we are typically undercutting our list service, our regulated toll and WATS-type service. This is a pricing dilemma that we face. We are saying to the Commission that one of the answers to that dilemma is to lower the list service or toll as close to economic cost as we realistically can. At that point, the discount provisions really are based on the economics of the technology and we can compete on a more level playing field. The idea of competition is to retain a profit level that can be used as a contribution for the retention of affordable residential telephone service. Thank you very much, Madam Chair.

CHAIRWOMAN MOORE: Mr. Morris?

MR. MORRIS: I thought Mr. Sullivan was going to make my exact closing point for me. He almost did. Very close. What he was saying is that when they go out and bid on a fiber optic link, they are dealing in a competitive environment. In those competitive areas, the monopoly profit is not there to help the ratepayer. To the extent that Pacific and the other phone companies are more efficient than the new competitors, there may be some small amount of contribution, because they can then price the cost of the next most efficient provider. While there may be some small contribution in there, for the most part, we are not talking about by allowing the utilities to play in this level playing field, in the competitive arena. We are not talking

about allowing them to retain vast amounts of monopoly profit that they can use to subsidize local rates.

CHAIRWOMAN MOORE: All right, Mr. Howley.

MR. HOWLEY: Pete Howley, again. I just want to thank you very much, Assemblywoman Moore, for inviting us. I really think all of us would agree that small businesses shouldn't be overlooked in these matters.

CHAIRWOMAN MOORE: Thank you all very much. It has been very enlightening. You will be hearing from us because there are things we want to further pursue.

Finally, our last two witnesses -- don't go away, Mr. Wyse. Our last two witnesses are going to be Mr. Schreiber, who arrived shortly after we got started, and Mr. Noll, who is going to tell us a little bit about the economics of changing utility regulation. Then if there are questions, we will go to them. So, why don't we have Professor Schreiber, then we will have Professor Noll to close.

PROFESSOR HARRY SCHREIBER: Thank you, Madam Chairwoman, I appreciate the invitation. I am Harry Schreiber, and I am professor of law at the University of California, Berkeley. I am an historian. I have written on the history of California law. I have been very interested in the background of regulation in California law. I also work in the area of federalism. These two subjects are quickly overlapping in ways you want to sort out. I have some written remarks that I will submit for the

record later. I want to respond instantly to Mr. Wyse's optimism that the FCC has no jurisdiction in California on local service. I think you made a mistake.

I think we do have to worry about that. I think the pattern of preemption has just been staggering in the last several years. If the federal courts are willing to rule, they have it. Any instrument that is capable of making an interstate call can come properly come under federal regulation. We certainly have to take very seriously the position on part of the FCC that local telephone service should be deregulated. This will be message of my more extended comments: I think we are dealing with new wine in old bottles. The new wine is a conservative deregulatory philosophy. The old bottle, which has a lot of clout particularly when you are hit over the head with it, is preemption.

When the California Railroad Commission was established under the 1911 law, and elaborated over the years to include other public utilities and transportation, federal preemption was an issue before the legislators and before the first Commission. It is an important part of our history that many of the most important ratemaking powers and operating practices authority that the Commission exercises, vis-a-vis the railroads, became almost mooted very quickly. The same thing happened in the public utilities area. I think Mr. Wyse will attest with respect to the procedures and formulas that controls capitalization and

returns. There has been a very elaborate duet for a period of three-quarters of a century or more. Over the years we have been accustomed to the phenomenon of the federal government establishing new agencies and extending its area of control very dramatically. Of course, during the New Deal period, publicly it made many sectors of the economy partially managed. Then in the 1970's, with environmental regulation and the regulation of health and safety proliferating, as new agencies were and new patterns were established, we became accustomed to this pattern or this phenomenon of a federal government regime which is expanding regulation, preempting the states. There are a few interesting exceptions like the smog control law, in which California has special status. By and large, though, that has been the pattern for three-quarters of a century.

Now, we have the same instruments, that marvelous two-bladed sword, in the hands of an administration and agencies that are hell-bent on deregulation. In some of the literature that was included in this excellent background paper (I think it was Mr. Phillips' article), there was a statement to the effect that "deregulation will require the separation of resource allocation objectives from social equity or income distribution considerations." Well, from the very beginning, of course, California's regulation has been involved in trying to achieve a delicate balance among all three of these factors. I think federal regulators, by and large, are quickly trying to strip

equity and redistributive considerations from the efficiency consideration. We are simply confronted with that.

My last comment has to do with history with respect to California law. We have in this state a very strong regulatory tradition. It actually goes back to the early years of California as a state. Our courts have always given the Legislature discretion with respect to what constitutes the public health, welfare, and safety. It has often been remarked that California is ahead in this area. We were also called forward-thinking when we were subsidizing these corporations that stand before us today, who asked for that regulation. The Legislature and the courts took a very broad view of eminent domain power. They took a very broad view of delegation. They were very generous in the formula that was devised for getting these utilities and railroads built, getting them rights-of-way, getting them into our homes and past our front yards. California has been both criticized and praised for that, in its time. We have had and continue to have a very strong legal trial basis for the police power, the regulatory power, in this state. But, it has always been within the framework of federalism. There has always been the possibility of preemption whenever Congress acted or whenever a federal agency was given preemptive power. This is paradox in the situation. I will try to spell that out a little more in my remarks.

I think what we have before us is a very fascinating and marvelous example of changing technology rendering old structures obsolete. The extent to which we can identify our political structure, the extent in which we can, in light of the conservative national administration, be allowed to keep equity and income distribution considerations in the forefront, is indeed the paramount question for the future.

CHAIRWOMAN MOORE: We always relied on the 1934 Communication Act. Essentially, it set up a partnership. I guess it is not so clear. We thought that intrastate was intrastate and under the control of the Public Service Commission. Interstate was under the FCC. We pretty much operated on that basis. But, what I hear you telling me is that it's not as clear as Mr. Wyse told me.

PROFESSOR SCHREIBER: I think it is not clear in the case that is now up for judication by the Supreme Court, the Louisiana. The Fifth Circuit Court actually stated, with respect to telephone company capitalization for the purposes of ratemaking, something to this effect: we recognize that this effectively undermines completely the state ratemaking authority, but that is the import of the preemption authority. That's a pretty close paraphrase. I don't congratulate the court for coming to that conclusion, Madam Chairwoman. I simply saying that I think that the trend is for the federal courts to stand four-square on the legitimacy of Congress and regulatory agency

saying, "Competition is a go," leaving these decisions to the market to the maximum degree possible as they go and, in the process, sweeping aside what I see as essentially residual state authority.

CHAIRWOMAN MOORE: I think the PUC is also -- aren't you a party in that? Is that the case that you are a party in?

MR. WYSE: I agree. That is a very crucial decision. I am not saying what the Supreme Court is going to do. It has been our position that we should retain authority. We are very concerned about the blurring. Depreciation is a classic case. If the FCC has that authority, they will be setting depreciation rates, which mean we will have to translate that into rates as a matter of policy. The consumers will be looking at us, and they won't understand where the decision was made on depreciation. We feel that one regulatory body ought to have responsibility to make this decision and be responsible.

CHAIRWOMAN MOORE: The National Conference of State Legislatures has also entered into the...

PROFESSOR SCHREIBER: Of course, it comes on the heels of the Garcia v. San Antonio decision, which like the Usery decision. It was on an issue that was utterly trivial compared to this one, the wages and hours of state employees, a very trivial issue in terms of state automony as compared to the regulation of public utilities. This is a far more important case, but the courts position in the Garcia case, that we should

leave these matters to the political process and let Congress worry about and represent state interests, gives us reasons of concern as to how they will handle this. On the other hand, I think all will agree that this is a far more important, substantive power of the states than the other.

CHAIRWOMAN MOORE: Okay. We will finally go to Mr. Noll, who is going to tell us what all of this means economically -- all the uncertainty, all the problems we heard about today, what it's doing to the regulatory environment here in California.

PROFESSOR ROGER NOLL: And, if you believe that, I've got some great swampland for you!

It is extraordinarily difficult to capsulize what you should be thinking about in three minutes. Let me just try in the following ways. First of all with regard to the movement towards generalized deregulation, economic regulatory spheres, it seems to me that it would be an horrendous mistake to believe that's ideological. The President's Task Force on Communication Policy, in the Johnson administration, said there ought to be more competition in interstate telecommunications. The antitrust case against AT&T was filed under Nixon, basically carried out (in terms of the staff work) under Carter, and finally settled under Reagan. So, that spans about as much of the American political spectrum as you can get, ideologically, and it is pretty uniform in terms of what people who looked at the problem seriously thought.

I think this is very different from deregulation of EPA, I might add. Environmental health regulation is a different animal from economic regulation. The case for traditional public utility regulation is dwindling relatively rapidly, and it is doing so for two reasons: the first is technology and the second is demand.

Natural monopoly is a concept. First of all, it is a concept about a company. It is not a concept about a gas pipe, an electric wire running down the street, or twisted copper wire pairs connecting a telephone. It is a concept about a company. Technological change in every industry in based on electronics, whether it is generating electricity or whether it is making telephones. It is causing the physical costs of providing service to drop in real terms at the rate of 5 or 6 percent a year. That means the organization and managerial aspects of those companies increasingly determines their performance through time. It is that that is determining whether we have natural monopolies. Very large cumbersome, multibillion dollar organizations aren't very efficient. If the physical cost to the system is declining and managerial costs rising, you're likely to see, for technological reasons, erosion of the viability of a monopoly as an efficiency concept, even if it exists to some degree in the physical component. That's most apparent in telecommunications.

CHAIRWOMAN MOORE: You're saying that the whole thing upon which it's built is destined to fail. Regardless of Mr. Wyse's commitment to protect the core group, that the monopoly is going to lose a great number of customers either through bypass or whathaveyou. Then, are we going to end up with people, like Cathie Wright, who are going to be left without telephone service?

PROFESSOR NOLL: That's the core question, exactly. The question has to do with the subsidy system. The bad news about the subsidy system is the flip side of monopoly. As a society, we don't like monopolies. We don't like monopolies because they charge extraordinarily high prices, and rip people off. What we have done with public utility regulation is say, in the old days, "Well, AT&T, (or PG&E or whatever), it is okay for you guys to be a monpolist towards some customers as long as you give it back to some of the others." Now, what happens, of course, is that, as the natural monopoly aspects go away, the subsidy can't be sustained without trying to prevent competition. And, if you are not in control of the whole technology, you can't do it.

The (Lifeline) bill that you had a couple of years ago really was terrific, because it highlights the issue. The issue is defining who deserves the subsidy and finding the most efficient way to give it to them. I have a second telephone, because my teenager is on the phone for two hours a night. I don't want the subsidy, please take it away from me. I have a

summer cabin up in the Sierras; up until two years ago, I paid less for that telephone than I paid for the one in Palo Alto. Please take away my subsidy. I don't need it.

CHAIRWOMAN MOORE: I think we tried to do that.

PROFESSOR NOLL: Yes. But that's problem number one. Problem number two is that regulation itself is a source of massive inefficiency. Look what happened to AT&T since divestiture. They have lost over half of their to market and equipment business.

In the early 1970's, before the Federal Communications Commission, they were saying, "Nobody but us can make a device to connect the telecommunication system that's safe and efficient. If you let anybody else on it, it is going to destroy the world as we know it today." They have now closed down all of their telephone plants.

CHAIRWOMAN MOORE: They weren't telling the truth, then.

PROFESSOR NOLL: No, they weren't. The fact of the matter is, AT&T has had to become an extremely efficient provider. But, now think about poor PacTel. They have one hundred years of capital investments almost all of which were bought from AT&T, which is a high cost supplier. That is what's in your ratebase and that is where your subsidy is coming from.

CHAIRWOMAN MOORE: But, if Mr. Wyse and the PUC would allow them to accelerate and do some other kinds of the stuff, wouldn't that?

PROFESSOR NOLL: But in the meantime, the price goes up and not down, because of accellerated depreciation.

The problem is a transition problem. It's not, in the long run, let's preserve the public utility concept at all cost. It is, how long do we have, maybe five to ten years, something like that, where we can squeeze revenue at the state level out of other services to eat away what the legal system has said should be allowed in the rate base, and eat it away and get rid of it and make the system efficient. That's all you've got and if not, PacTel is going to be like Bank of America in the fourth quarter, when they had to write-off three hundred million dollars of bad loans. You don't see PacTel writing off hundreds of millions of dollars of bad investments. Put they are still there. It is over capacity in lots of PacTel's territory, because of people dropping off Centrex and leaving lots of copper wire sitting in the ground unused. Whay happens is they get switched to the residential ratepayer.

CHAIRWOMAN MOORE: Not if Mr. Wyse can help it.

PROFESSOR NOLL: Well, but they do, because he can't prevent it.

CHAIRWOMAN MOORE: I would think that comes under the prudence review, and I would think they would say it wasn't right...

PROFESSOR NOLL: Once it is in, it is extremely hard to get it out. That's right. If they were trying to build access

capacity when there is already plenty of access capacity there, you're right. But once it's in, it is very hard to get it out. It's much harder to get it out then to get it in to begin with. I don't know, he may want to comment on that.

CHAIRWOMAN MOORE: He gets the last parting shot.

PROFESSOR NOLL: It seems to me that the bad news about the subsidy is that it is real from an accounting cost point of view. The good news about the subsidy is it is probably not real from an economic cost point of view. That is, for the vast majority of customers, what they are paying now is not wildly different from what they would pay in the long run for telephone service.

CHAIRWOMAN MOORE: You've got a lot of utilities nodding their heads in agreement with you. We thank you for your testimony. It has been very enlightening. A little gloom and doom but, other than that, it has been very enlightening. We thank you and we are sorry we couldn't get you on earlier.

Mr. Wyse, you're on to conclude. Tell us how you are going to meet all the challenges that have just been told, especially since you have been told you will probably be out of business in about five years.

MR. WYSE: Let me be brief. I did prepare written remarks which you can have a look at. Given the hour, it may be more useful, if I briefly summarize.

First of all, I want to compliment you for recognizing the similarities across three industries. We see it every day at the PUC: telecommunications bypass, self-generation, fuel switching, all the same kinds of issues. The issue is competition.

I don't see full deregulation in the near future. What I see in each industry is a mix of regulation and competition. That is, competition in some segments of the markets, but a lot of customers who have no choice but to use the local exchange utility. Given that kind of market, whether that's a good thing or a bad thing is not the issue. There are reasons that's occurring, technologies and federal policies. That's what we face. That's the reality. The question is, what does that mean to the PUC? What it means, I think, is that we have to broaden our responsibilities beyond traditional protection of monopoly utilities to also consider the nature of the competitive threat and how we are going to respond to it. This is a new challenge for the Commission and beyond our traditional one.

Competition has some common characteristics across each industry. In each case, it's not pervasive. It's segmented. Typically, the competitors tier to the large customers. You hear the EOR market. You hear bypass in telecommunications, self-generation, among all large customers. We don't have that kind of competition typically in the small customer groups; some, but not much.

Which leads to my third conclusion. That is the potential need to redesign rates, and unfortunately, shifting costs to the small customers in order to keep the large customers on. That's the "telephone story" that we're hearing across the utility industry.

CHAIRWOMAN MOORE: Isn't that the easy way? The captive group kind of theory? Isn't that the easiest way for the PUC, just to to shift it to the residential user, the end user has no choice but to stay there?

MR. WYSE: It's one way. It is obviously not the preferable way. What we always must do is push the utilities hard on improving productivity and lowering their overall costs.

CHAIRWOMAN MOORE: They're saying they are doing that.

MR. WYSE: In the recent PacBell rate base, their rates actually dropped instead of increasing, as PacBell requested. I think that reflects increased revenues and improved productivity. That's what we want. If we can lower cost overall, that's the best strategy. But even doing that I think we have the problem that in segments there is competition. We need to understand it. If it is in the interest of all ratepayers, we probably have to respond to it. It may be better to keep large users on the system than lose them altogether.

The fourth thing: you are hearing a lot about diversification. Given the competitive threat, utilities are taking another look in getting into competitive markets

themselves. That's another theme you are hearing across the industries. We have to understand markets better. We have to understand the nature of the threat -- telecommunications, bypass, EOR, pipeline. We have to understand what the competitors are offering. We have to understand utility costs better so that we can know whether it makes sense to reduce rates. Obviously, we aren't interested in reducing rates which constitute a cross-subsidy. We need to understand cost by segment better.

Fifth, I think we need to redefine service obligations to some extent. Insofar as the customer has alternatives, it is not clear that we should have the utility on call at all times to serve the customer. We may need to have longer term contracts with customers or standby charges. There are a whole range of alternatives for dealing with the fact that the customer has alternatives. We need to carefully scrutinize utility investment programs.

CHAIRWOMAN MOORE: Let me ask you something. Do you feel that the PUC has the authority to do that with no further authorization from the Legislature?

MR. WYSE: I don't know. We are looking at that. For example, long term contracts is an area that may be gray. If you are interested I will get your question back to the Legal Division because I am not a lawyer, and it is a good issue.

CHAIRWOMAN MOORE: I would like that.

MR. WYSE: I will do that. I think the service obligation is an important issue. Insofar as large industry wants to have choices, I can understand that. But then, it needs to understand the flip side of that, what the obligation of the utility might be limited.

Finally, it is probably desirable to shift some of the responsibility and risks to the utilities. The Commission's current review of ratemaking, reflects that. We want to have the utilities and not just the core ratepayers to have a strong stake in the outcome. Tthey must some direct financial incentives to serve all of ir markets as best they can.

Tese are the main role changes, and they are big changes for us. We have to manage differently because we have these new roles. We have to be procedurally more flexible. We need stronger staff than ever before, and an interdisciplinary staff. We have to keep up with computers. We are very pleased to report our computer program is going very well thanks to a lot of help from the Legislature and you in particular, Ms. Moore. So, that's is our agenda. We are aware of it. As I say, it cuts across all the industries and poses a big challenge for us. It's here and we've got to cope with it.

CHAIRWOMAN MOORE: I thank you. I know Ms. Wright joins me in thanking all of you for your presentations. It has been very informative. We really appreciate you're taking time from your busy schedules to come forth. With that, we will adjourn this hearing.

CORRESPONDENCE AND SUBMISSIONS

THE UTILITY INDUSTRY IN FLUX

Testimony Before

The Assembly Utilities and Commerce Committee

Duncan Wyse
Director, Policy and
Planning Division
California Public Utilities Commission

February 5, 1986

* This testimony does not necessarily reflect the views of the Public Utilities Commissioners or Staff.

Thank you for inviting me to testify today.

As the Committee's Notice suggests, California's electric, natural gas and telecommunications utilities are in a period of tremendous flux. Companies which were once sleepy monopolies now are facing the challenges of competition. Whether it is called telecommuncations bypass, natural gas fuel switching, or electric self generation, a theme recurs across the industries under PUC jurisdiction. Competitive challenges are forcing utilities - and their regulators - to rethink some basic business assumptions, including the nature of utility service obligations.

In this testimony, I will briefly describe the nature of the competition facing the utilities in California, and then raise some implications these changes have for how the Public Utilities Commission regulates the industry.

To summarize my main conclusion, I forsee a complex mix of monopoly and competitive market segments emerging in the natural gas, electricity and telecommunications industries. The role of the PUC will broaden beyond the traditional one of protecting consumers from monopoly utilities. Increasingly, the PUC will also need to cope with the pressures of redesigning rates to make utility service competitive in order to retain customers. Unfortunately, that often means shifting rates onto residential and small business customers, rather than losing large business customers (and the contributing revenues such customers provide) altogether. Conversely, the PUC must protect consumers and potential competitors from utility cross subsidies of competitive offerings.

The emergence of competition in the utility industry can be attributed to two main causes: technology and federal policy. For better or worse, competition is likely to grow over the forseeable future. For example, in telecommunications, the merging of data and telephone technology has resulted into new entry into the industry. Under accomodating federal policy, we are witnessing an increasing number of competitive telecommunications services, including long distance, customer premises equipment, cellular radio, and even certain parts of the local exchange.

In natural gas, the Natural Gas Policy Act wellhead deregulation, FERC policy on pipeline transportation and the collapse of OPEC has heightened the competitive pressures for California gas utilities enormously. In electricity, the independent production program and the opportunities for purchasing out of state electricity is challenging the utilities monopoly over electric generation.

There are many common themes across all of the industries. First, while competition is significant, in every case it is not pervasive. Competition does not extend throughout any utility's

service territory. We expect that utilities will continue to maintain monopoly control over many services for the forseeable future, including service to nearly all residential and small business customers. As a result, continued consumer protection against monopoly pricing will continue to be necessary in spite of the emergence of competition on some segments.

A second theme is that the competitors tend to target the largest customers. In telecommunications, for example, bypass proposals are typically targeted for very large business and government agencies. In natural gas, the biggest competitive threat is for the enormous Kern County enhanced oil recovery market. In electricity, large customer cogeneration poses the biggest competitive threat. This leads to the third theme. For utilities to remain competitive, we must often lower rates - and develop new packages of services - for larger customers to retain them on the system. Often, other rates must increase to accomodate the competitive pressures. In many cases, it is better to keep these large customers with the utility, albeit at lower prices, rather than to lose them entirely.

A final theme is that the utilities are responding to emerging competition through diversification. Pacific Telesis, for example, offers a number of products through its unregulated subsidiaries that are competing with its utility subsidiary, Pacific Bell. Southern California Edison has entered into the cogeneration business, in part in order to maintain market position. San Diego Gas and Electric currently has a holding company proposal before the PUC. Given the changing market structures, diversification is an understandable strategy for the utilities. However, it also a development that requires PUC review to ensure that ratepayer interests are protected.

In the face of growing competition, the PUC is reevaluating its regulatory policy for the energy and telecommunications utilities. The PUC has been conducting a number of investigations and public hearings to enable us to grapple with what these changes imply for policy. While much remains to be accomplished, I think that we have made much progress in adjusting to a changing environment. Without going into the details of the PUC's regulatory policy for each industry, I would like to suggest some common responses for the PUC to protect consumers in a more difficult environment.

1. Become More Market Focused. The utilities face competition on many segments. In order for the Commission to determine whether to allow utilities to reduce rates to meet competition (and raise the rates of other customers), the PUC needs to understand the nature and extent of the competitive threat. For example, in order to reach a decision on telecommunications access charges, the Commission needed to have an understanding of the threat carrier and private bypass poses to the local telecommunications utilities. Another example is the recent Commission decision to require intrastate natural gas

transportation. The decision was a carefully designed effort to respond to a potential new interstate pipeline. Traditionally, the PUC was able to design rates based on its best judgment on an equitable allocation of costs. Today, these judgments must be tempered with competitive considerations.

2. Understand Utilities' costs by Segment. This second response is related to the first. In order to determine whether it is worth redesigning rates to meet competition, the Commission needs to understand the costs of providing specific services. For example, in order to decide whether to permit Pacific Bell to lower prices for its Centrex offering to compete with other vendors, the Commission needs to understand whether Centrex revenues exceed the costs of providing the service. If they don't other ratepayers would not benefit from keeping Centrex customers. Lower prices would simply represent a cross subsidy. The Commission is very good at understanding the overall costs of providing utility service. We are still building up our capabilities in specific product analysis.

3. Redefine Service Obligations. Historically, utilities have had an obligation to serve all the customers in their service territories. This service obligation was one of the responsibilities utilities accepted in return for a monopoly franchise. For customers with competitive alternatives, the nature of this service obligation needs to be reexamined. Often, utilities must make long term investments in order to serve a customer. If a large group of customers abandon the utility, someone will need to pick up these costs.

Typically, utility services are priced without long term contractual obligations with customers. In the new environment it may be appropriate to ask customers who could abandon the utility to make long term commitments before the utility makes large capital investments to serve. Such long term commitments are included, for example, in the Commission's recent natural gas transportation decision.

Another approach to dealing with the service obligation issue is to assess "stand-by" charges on customers. For example, industrial customers who choose to burn oil instead of natural gas at any particular time continue to benefit by having the natural gas distribution system as an option for the future. Through stand-by charges, such customers would pay for that option.

4. Carefully Examine Utility Investment Programs. In a period in which competition may overwhelm some segments of the utility market, it is crucial that the utilities are careful to avoid investing in equipment that ultimately will become stranded due to competition. The Commission's review of telecommunications modernization programs, natural gas procurement strategy, and electric utility generation plans are critically important.

5. When Possible, Shift Responsibility and Risks to Utilities. Utility management can be closer to the market than the regulators. By placing risks and rewards on utilities, they may be better positioned to respond. The Commissions recent decision to review its balancing account mechanisms reflects this effort.

This agenda to respond to competition in no way suggests that the Commission can abandon the work that it has performed well for years - scrutinizing rate applications, setting service standards and adjudicating customer complaints. Competition poses new challenges for the Commission in addition to the traditional challenge of protecting consumers from a monopoly utility.

These new roles for the PUC have implications for the way the agency is managed. Three directions are important.

1. Be Procedurally Flexible. Because of the complexity of the issues before the Commission, a wide variety of administrative procedures are useful. The Commission has responded in recent years with increased reliance on rulemaking, workshops, informal hearings, settlement conferences as well as its evidentiary proceedings. To respond to rapidly changing market conditions the Commission needs to be procedurally versatile.

2. Maintain A Strong Interdisciplinary Staff. Utility regulation today requires a talented pool of engineers, accountants, economists, and attorneys in order to grapple with complex, often ambiguous issues. Recruiting and training are critical.

3. Keep Up With Computer Technology. Many of the complex rate design, resource planning, and investment issues can only be properly addressed through complex computer models. The Commission, with the strong support of the legislature through AB 475 and support of our computer hardware budgets, is committed to having trained staff and first rate computer equipment to undertake sophisticated analysis.

Competition has entered the utility business, for better or worse. While the benefits of competition for any particular market is a good subject for debate, the reality is that regardless of the policy of the legislature or the PUC significantly increased competition appears to be inevitable in the future. To protect all consumers' interests, we must be prepared to respond to it.

PETER A. HOWLEY'S PREPARED COMMENTS
TO THE ASSEMBLY COMMITTEE ON UTILITIES AND COMMERCE

UTILITY REGULATION IN FLUX: THE MONOPOLY FRANCHISE, PRIVATE SERVICE, AND THE PUBLIC INTEREST

February 5, 1986 - 1:30 PM

Thank you very much for your invitation. I am particularly pleased because CENTEX Telecommunications, Inc. is the telecommunications manager for a forgotten class of customers - small businesses. We serve over 600 of them. They are frequently left out of discussions like this one today.

Let me take a moment or two to introduce myself. I took over less than 6 months ago as President and CEO of CENTEX. Prior to that, I spent eight years as General Manager of an independent local telephone utility in Arizona, serving approximately 60,000 people in a rural, but fast-growing part of the State. So, I am familiar with the challenges and problems facing utilities today.

Prior to that, I held various management positions for three years with MCI, and before that, spent close to eight years with AT&T Long Lines in the New York area.

As a telecommunications manager for businesses, typically with 10-100 employees, CENTEX does three things:

1. We act much like the telecommunications manager of a large corporation in selecting those facilities that provide the most efficient telecommunications services for our Members.

2. CENTEX does not bypass the local telephone company. In fact, our group is a large customer of Pacific Bell. We exclusively use Pacific Bell's facilities for calls made within Pacific Bell's service area. We also use these facilities to make available to our Members other technology which Pacific Bell does not provide.

3. CENTEX provides to its "Joint User Group" Members monthly management reports; performs analyses of our Members' traffic, telecommunications configurations and costs; coordinates and manages network facilities and routing; and provides centralized trouble reporting, individual quality of service reviews, toll restriction assistance, network dialing assistance and general telephony advice. The management reports not only provide printouts showing all of our Members' calls placed on their CENTEX-managed lines, but also show where there were exceptionally long calls, exceptionally expensive calls or an unusually large number of calls to a single number. These reports make it far easier for our Members to manage or control their own telecommunications usage than the ordinary telephone bills; they are very similar to the reports that owners of large PBX's get, but which are otherwise not generally available to small businesses.

WHY ARE THE ACTIVITIES OF A SMALL TELECOMMUNICATION MANAGER LIKE CENTEX IMPORTANT TO THIS COMMITTEE?

Small and medium-size businesses are the forgotten telecommunication customers.

Large entities, such as the State government and national corporations, can afford telecommunication managers and departments of their own to see that their interests are promoted, and to keep abreast of what is occurring with respect to legislative, regulatory and technological changes. Regulatory agencies, such as the California Public Utilities Commission, and legislators, such as yourselves, ably represent the interests of residential users. CENTEX Members are too small to afford individual telecommunication managers. CENTEX fulfills that need.

The activities of all new telecommunication companies are not inimical to the interests of local telephone utilities and the general ratepayer.

CENTEX does not bypass the facilities of the local telephone company. CENTEX only uses Pacific Bell facilities. In fact, CENTEX manages and adds to Pacific's facilities to render them more attractive to customers who otherwise might be potential bypassers.

More information is needed before passing additional telecommunication legislation.

Divestiture did not create the opportunity for CENTEX. We could have operated much as we do now, prior to the division of what used to be AT&T. Divestiture just increased the demand for our management services significantly. As with all companies, CENTEX wants to increase the amount of business it does; however, we suggest that the results of divestiture should become known prior to enacting new legislation. Whether one believes divestiture was a mistake or a long-needed solution, it behooves all of us to learn from it before making further changes. If problems do occur, the Legislature could then take action, knowing much more than any of us do today.

WM/aw 2-4-86

Michael Winn
2135 Caminito del Barco
Del Mar, CA 92014

February 5, 1986

Honorable Gwen Moore, Chairwoman
Assembly Committee on Utilities and Commerce
California Legislature
State Capitol
Sacramento, CA 95814

Greetings,

Thank you for this opportunity to present a case for telecommunications services designed in the public interest.

Attached with this letter, please find a chapter from a book I have recently completed which is to be published by a major publisher later this year. The book is about establishing intelligent criteria for development and the role technologies are to play in this. The chapter I have enclosed deals with the regulatory issues we are to discuss today. I have summarized below my responses to the issues of interest to the committee which are listed on page 8 of the mailing I received from Mr. Jacobson.

First, I must admit I had some difficulty dealing with these issues as separate items to be construed as part of an existing regulatory program, the very nature of which is called into question for its inhibiting effects on social, commercial and economic progress. The approach is analogous to suggesting that by changing the seasoning of a roast beef, one could transform it somehow into a pumpkin pie. In short, there is little in the present regulatory structure which is applicable to state of the art conditions. The material I have enclosed from my book explains why this is so and the direction we must follow to find alternatives which are consistent with the state of the art of emerging technologies and evolving public need. What is more to the point, the questions you have raised; such as, "What is the obligation of a utility to be prepared to render service?" are unanswerable, unless one abandons the concept of a franchise operation of a telecommunications monopoly. Having decided against monopoly and in favor of competitive services calls forth a question superior to the considerations on page 8 of, "what then?"

All of the questions on page 8 can be addressed with relative ease, providing that regulations are adopted that are consistent with the needs of state of the art computer and telecommunications technologies and the presence of meaningful competition in local telecommunications services (as distinct from de facto monopolies resulting from the domination of the market by multi-billion dollar Bell Operating Companies.)

Under a certain set of circumstances all of the issues brought up on page 8 are easily resolved by procedural elements in support of public policy. I have therefore prefaced my answers to the questions you have raised with the statement that we need to seriously consider a new approach to managing the needs of public telecommunications services. Because of the opportunities afforded by emerging technologies, we will be forced to continue to move away from monopoly franchises (whether official or de facto) as a solution to the problem of providing universal service. What we will have some choice about is the efficiency with which we make changes and the intelligence we use in setting up a system which is appropriate to emerging conditions.

With this in mind, I wish to make a few suggestions that are consistent with a probable future scenario, based on studies of current technological evolution. Were we to implement these suggestions immediately, we would take a step into the future that could enormously strengthen our local and State economies and advance our ability to govern and manage social services of all kinds. The workability of the suggestions arises from the way in which new technologies allow us to isolate the transmission utility aspect of telecommunications technology from other services by establishing certain technical standards. This is analogous to the way we build highways and establish standards for vehicles, speed limits and other regulations without getting involved in the design, engineering or manufacturing of cars and trucks.

1) My first suggestion is that the State establish standards for ISDN transmission characteristics that are consistent with emerging state of the art telecommunications services. As a part of these standards, bandwidth should be assigned to be available for various levels and types of service.

2) I further suggest that the State fund the development of transmission services utilities for ISDN

telecommunications. As in the case of highway construction, the State should support the technology for signal transmission by means of taxes levied on usage, analogous to gasoline taxes; by means of development surcharges in growth areas, and by means of license payments paid by service companies which use the transmission media.

3) Within this framework, the State could give localities the right to grant franchises to private firms to install and operate local switching facilities that are compatible with the State network. The pricing structures of these local services should be based on standards set by the State.

4) A variation might provide that if a private firm wished to provide transmission facilities that are different from those offered by the State operated transmission utility (possibly unlikely in view of presently developing technologies,) the State should not interfere. If a private firm offered to compete favorably with the State service by offering equal or better service, at lower rates, the State should offer such a firm an apportioned amount of tax revenues based on usage and may even surrender service to the private enterprise on a renewable contract basis, subject to appropriate reviews.

Such suggestions take for granted a committment by the State to providing state of the art telecommunications services to citizens. In this situation, all of the issues on page 8 evaporate. Other issues arise relative to management and legal precedent which, although they may seem difficult because they are unfamiliar, are actually procedural and managerial issues, ammenable to solution.

The mystique of technology intimidates many people who are less familiar with them. In fact, the management of telecommunications technology is no more difficult than managing the Highway Patrol. In fact, the responsibilities involved with the police are riskier. The hands-on elements of modern telephony and ISDN technology are managed by computers. The vendors of telecommunications equipment and software are unusually good about servicing their equipment, training users, and up-grading systems. There is little to fear.

The problem of providing affordable public access to telecommunications services will never be solved by the Bell franchisees, it is anathema to their fundamental operating

principle. It is a poor joke on the citizen to expect that AT&T and the Bell Operating Companies, with billions of dollars of revenue assets at stake, after decades of monopoly operation are suddenly going to become less predatory, more efficient, or more honest than they ever have been in the past. The "regulatory blackmail" about which Mr. Don Vail of the PUC was quoted in your background document is enough of an example.

I wish to address a technical point on page 7 of your background statement about the costs of implementing an ISDN. The statement is incorrect and misleading. The up-front costs of ISDN technology will be relatively cheap. Also, Pacific Bell's Danville experiment is a poor example of ISDN services. As I understand it, Pacific Bell's project is a) self-serving, b) based on technology limited by a requirement that the experiment operate compatibly with the obsolete standards of the AT&T network, and c) the project is far less meaningful to the conversation we are having today than projects such as the Fujitsu ISDN in Singapore and production level ISDN projects in France.

I appreciate this opportunity to present my views. Thank you for listening. My views are not necessarily the views of Fiber Data Systems or my colleagues in that enterprise. To the extent that my views are expressed in the public interest they have been a source of motivation for the FDS project.

Yours very truly,

Michael Winn

Encl: The Public Telecommunications Utility